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ABSTRACT

Assuming development is a process that involves the generation, diffusion, and realization of new opportunities, this paper discusses the following: (1) The Development Process: Facts and Issues (re: visible unemployment; rural to urban migration; the dualism of labor markets in the less developed countries; population growth; and the disequilibrium of economic life in the development stage); (2) The Attributes of Development Man (adaptive and innovative); (3) The Formation of Competencies and the Transmission of Information (an economic analysis of people-changing processes; skill mobility and the markets for "jobs" and "work"; how different types of competencies are acquired; information "fields" and "resistances" to information); (4) Toward Progressive Agriculture (target groups in education for agriculture; substitution and complementaries among schooling, extension, and research; maximizing the efficiency of information systems); (5) The Rural Nonfarm Economy (symbiotic relationships in the developing rural nonfarm economy; dualisms and continua in skills and in scale; education, communication, and innovation in the nonfarm enterprise); (6) Strategies for the Enlargement of Opportunities and Their Realization (the elusive meanings of integrated development; the interdependencies of education and development; economic incentives and agricultural progress; unleashing the energies and ingenuities of ordinary man). (JC)

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RURAL PEOPLE AND RURAL ECONOMIC DEVELOPMENT

M. J. Bowman

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RURAL PEOPLE AND RURAL ECONOMIC DEVELOPMENT*

by

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Introductory remarks

There is nothing new about concern with rural economic development. Indeed, research scholars have done brilliant work on agriculture, from genetics to economics, in this century and right up to today. In addition, the FAO, various governmental aid agencies and some of the leading foundations have sponsored agricultural research and programs for its dissemination in the LDC's. Researchers were ahead of the agencies (whether national or multinational) in perceiving the imbalance in development policies with their biases toward industry, and thus in perceiving the need to shift emphasis toward agriculture. Even policy-makers who were pro-agriculture let actions lag behind words. There were demands for food, but policies that lowered profit in producing it. Early attempts to socialize agriculture were grotesque failures despite many socialist successes in other fields. Moreover, since World War II smaller non-farm enterprises have rarely been regarded as of major development importance, even though it is just there (as in agriculture) that improvement in opportunities for exercise of skill and alertness by the average man pays off. Governments have overtaxed agriculture, discouraged village traders, and inflated the ambitions of young people to do other things. None of these actions encourage the development of ordinary people or the rural economy.

Concern about the forming of human resources for economic development, again, is nothing new; it has been pervasive since the end of the war and has older roots. Moreover, among both historians and economic theorists who have turned their attention to this problem, there has long been recognition of the vital importance of what more recently is termed the "non-formal" and the

*The author is indebted to the Guggenheim Foundation for enabling her to spend a year in work on "the economics of education in a world of change." This paper is an offshoot of that work.

"informal" educational sectors. However, until very recently the voices urging this general point, along with those urging the importance of the smaller non-farm enterprises in the diffusion of economic development, have been largely ignored. Attention to industry and to big plans goes along with a focus on formal education and on the notion that there must be more and more of it for everyone. These preoccupations inhibited a broader view of the dynamics of development and the crucial interdependencies of the development process. It is no accident, under these conditions, that attention to out-of-school learning and training has come from those engaged in efforts to encourage agricultural change or who were faced with problems of an emergency "crash" training for new industries and for localization of personnel in government corporations and bureaucracies.

The biases toward bigness, toward industry, and toward a very formal sort of schooling all go together. These biases reflect the downgrading of small economic undertakings. The small businesses are downgraded also because they are difficult to plan from the center in any direct way, and therefore beneath the dignity of planners. It is much easier for governments and loan agencies to assess a large industrial project than an equally costly galaxy of small ones. However, the latter would usually provide more employment and more real increase in production over time. Similarly, it is much easier for leaders of an ex-colony to import a familiar school system, with a tidily ordered examination structure — often more rigid and less responsive to actual needs than the metropole system taken as the model — than to work out the more subtle and innovative methods that would encourage the diversified, decentralized, and creatively "disorderly" dynamics of a useful program to nourish human resources.

This conference could mark entry into a new era for both educational and economic development planning in the LDC's. I say "could" rather than "does" or "will." The newly aroused interest in the so-called "nonformal" and "informal" kinds of education and the enthusiasm for "integrated" approaches

could turn out to be beneficient and progressive, but if they mainly are slogans for planners to extend their dominions results could instead be perverse.

The discussion that follows is organized under six headings: Section I presents a few questions and some rather terse summary statements about a few economic-development facts of life, with particular attention to the potentials of rural development. Section II states analytically the attributes of "Development Man." Among these attributes, efficiency in obtaining information and interpreting it is central, along with many other sorts of skills and competencies. Section III examines processes and agencies of education and learning and the transmission of information, using an economic-analytical framework. Sections IV and V contain applications of these analyses to agriculture and to non-farm small enterprises. Section VI concludes the paper with some policy inferences and underlines some major issues.

Throughout I view development as a process: <u>the generation, diffusion and realization of new opportunities</u>. Some opportunities arise from the play of external events, others are generated from within the society, but in either case they will have local distinctiveness. Diffusion of opportunity is important; indeed, until there is a substantial diffusion of new opportunities among a population there can be little development. A privileged bureaucracy living in a "modern" world apart from the vast unchanged majority is no more development than an elaborate facade is the building behind it. The realization of opportunities in action is of course essential, for until opportunities are noticed and acted upon — and in the process developed further — little happens. But this does not mean that each step will be dramatic. The outward signs of the inward drive for development consist of small gains: fewer days sick, fewer hours per week fetching water, cheaper matches, a transistor radio, shoes

to wear in the stubble, cheap cloth, fertilizer for the garden, more eggs per hen.

Development is by, of, and for people. Whatever people have to work with, development is inextricably intertwined with the development of people, improvement in their capabilities and widening in the scope of their awareness. Development must also be for people. I am not concerned on that score to distinguish between what is "economic" or "non-economic", which is a generally misleading distinction in any case. However, attention will be concentrated upon productivity and upon employment effects of development. I leave to one side the purely "consumption" values of enlarged horizons and new awareness associated with education. If production rises steadily, we may be sure that people are enlarging the range of their experience.

I. The Development Process: Some Facts and Issues

Most people have experienced the discovery that what they "knew all along" and the words they used to discribe it had a greater richness of meanings than they had realized before. New words might be coined to describe this new appreciation, but new words mean only what our understanding can put into them. Something like this is happening today as we learn to think about development in new ways and as there is greater interest in the wide diffusion of opportunities among a people. But with any new outlook people tend to think in extremes; they shift from a discouraged mood in considering what has not been accomplished to a naive utopianism about what might be done by tomorrow. Each of these moods can be constructive — the former keeps us self-critical, the latter keeps us hopeful and fires new energies. But there is a need also to preserve a realistic perspective in assessing processes and potentials. My reading of experience in development leads me to make the following terse preliminary remarks.

1. First of all, there has in fact been remarkable economic progress in most of the poorer nations, a progress far more rapid than that in the West two centuries ago. The problem that has become most pervasive is not periodic famine, but visible unemployment. (Disguised unemployment and underemployment are new words for very old phenomena.) Population growth is a manifestation of progress in preventive medecine and sanitation and in nutrition. Unfortunately, rapid population growth is also a problem, or rather, a complex set of problems, including heavy rural-urban migration.

2. As Vincent Barnett said in winding up his carefully balanced analysis of the causes of rising urban unemployment in many LDC's:[1] "At the base

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[1] Footnotes are given on pages 95-105.

of the problem lies the too-rapid growth of the labor force flowing from high population growth rates. Presently advanced countries did not have to cope during their period of rapid development with population growth rates of the magnitude now characterizing most of the developing countries." He points out also that "the transformation of rural underemployment into open unemployment in urban centers changes both the magnitude and the political nature of the problem." With these developments, the rural population and economy come to be seen as an urban problem. There is cumulative evidence that education has little to do with rates of rural-urban migration, even though it is the more educated who most often migrate. But rural migration into urban unemployment is not any less a problem because it is so often misunderstood.

3. Although the simplified distinction between "rural" and "urban" is useful shorthand, in reality there is no clear-cut dichotomy. It is important in particular to avoid getting trapped in dichotomies between rural and urban industry or between rural and urban education. Ideas and economic activities diffuse through space in complex but relatively stable spatial patterns. We must ask how far what is "rural" or what is "urban" depends upon the intensities and forms of communication networks and upon physical infrastructure. Do differences in these respects form a continuum, or is the society marked by disjunctions? What are the underlying forces with or against which strategies for the spatial diffusion of development must work? In rich and poor countries alike, many issues will depend upon how people deal with spatial development policies. When, for example, is it more beneficial for people to migrate out of an area, and when is it better to bring in physical capital and other complementary resources? There are extreme cases where the former is inescapable; we have seen this recently in the rural resettling of people from famine areas of Ethiopia and Somalia. It is true also that the infrastructure and communication links that are established at an early stage in development put limits on the spatial patterns of growth. Immediately

this raises questions about when and where (and whether) to put resources into a framework that will spread development in the long future more evenly, even at a cost in the present and near future. There is always the tension, furthermore, between a policy of putting special efforts into assistance at potential growth nodes to serve a hinterland indirectly and the desire to go directly into remoter areas where the "need" appears most intense, the disadvantage most severe. These problems are not confined to the LDC's. They can be illustrated in the richest countries:[2]

> The frustration of an ARA (Area Rehabilitation Administration) program that sought out the most hopeless areas for 'designation' and then aimed at inducing economic growth should have been anticipated from the start. But the political processes that molded ARA paid little heed to what was in fact known .... Fortunately, Charles Schultze and others are bringing thinking around to a "growth point" orientation that can have much more promise — but that is very different indeed from focusing upon the areas of minimal potential."

In fact, in the United States as in Sweden the main result of efforts to increase opportunities in relatively backward areas (whether by expensive investments in infrastructures or in other ways) has been to make it easier for people to move out of these areas into economically more viable communities. Highways, both literally and figuratively, go in two directions.

4. The "crisis in education" in most of its manifestations is not mainly a result of what happens in schools. It is more an effect of the dualism of labor markets in the LDC's, which of course feeds back into the schools. The bureaucratic image of assured good jobs for those who make it to the top of the educational ladder extends its influence down through the entire educational system. This makes the formal still more formal, it formalizes the nonformal, and it aggravates certification bias. In parallel with the bureaucracy, dualism in labor markets is sustained by the presence of modern large-scale enterprises offering pay and working conditions far above what can be earned from work elsewhere. Furthermore, this dualism aggravates the

transforming of rural underemployment into urban open unemployment. Kenneth King drew an apt distinction, with many ramifications, between "jobs" (in short supply) and "work" (in relatively unrestricted supply)[3]; this contrast is a facet of social and economic dualism. The "work-job" distinction is important, but so also are the patterns (which King documents for Kenya) of sliding among "jobs" (in modern and less modern paid employment) and between "jobs" and "work" (in self employment). This phenomenon occurs in both rural and urban places. The urban conditions carry their effects back into rural hinterlands. Flows of people, of trade, of learning and training at work, and the comings and goings of small indigenous enterprises are all part of this rural-urban interdependence and its "work-job" dimensions.

5. It is the essence of development that economic life always is in disequilibrium. New opportunities arise, new responses are made to them, further new opportunities open up, and so on. Staying briefly in the broad context of a total national economy, it is sometimes helpful to see the process of development in terms of a sequence of leads and lags in the supplies of factors that contribute to development, including human capabilities. In many countries today it is clear that formal schooling has on the whole led development, as it did historically in the United States and Sweden but not in England. Such leads can be considerable since the amount of schooling that can be provided is not bound up in any direct way with the functioning of the rest of the economy. However, the spread of the capabilities and "know-how" that can be acquired only by experience at work cannot get very far ahead of economic development itself. Neither can construction and utilization of physical capital get too far out of line with the development of the human resources capable of working with it. This means that there is an inherent assymetry in the leads and lags of development and in the particular technologies and forms of organization that emerge.[4] Dualism in the economies of many LDC's is in part a reflection of this fundamental fact.

Lags that impede development are most severe where the deficient factors are so interlocked with development itself that their supply cannot be increased without the development to which they would contribute. What has come fadishly to be called "nonformal" and, especially, "informal" education was stressed by Ingvar Svennilson over a dozen years ago. And just this problem was the major theme of my essay "From Guilds to Infant Training Industries" (written in 1963) from the first page of which I quote here:[5]

> Something besides physical capital is obviously missing... However, schooling is not the only "something" that the less developed countries lack. This conclusion becomes increasingly evident as we watch the rising tides of unemployed school leavers in many parts of Asia and Africa. It is not enough to reply that the school pyramid has the wrong shape or that the curricula are out of line with needs....
>
> An especially critical gap is in the skill and know-how that comes only with on-the-job experience. This obstruction can be peculiarly awkward when the creation of the opportunities to acquire a skill depends upon the establishment of enterprises that in turn look for available supplies of skills when making their location decisions. Nevertheless, economies have developed, both with and without a long period in which artisan skills dominated secondary industry. What shapes has the problem taken in one societal setting versus another, and with changes in the technological world environment? In what ways has it been overcome? What part have restrictions on mobility, removal of restrictions, public subsidy, and public enterprise played in this? How far are schools and on-the-job training potential substitutes, and for the acquisition of what kinds of competencies? How far are they instead essentially complementary?

The questions raised in these last sentences remain critical today.

The third part of that essay is focussed most directly on modernization and the pace and structure of development, past and present, in today's LDC's. The emphasis was on "infant training industries."[6]

> What makes a potentially productive industry an infant is then one or both of two things: gaps in human competencies and know-how, and gaps in complementary industries and physical infrastructure (external economies). I use the term "infant training industries" to direct attention to the role that the industry itself may play in developing new kinds of human resources and know-how. All "infant industries" are at least potentially in greater or lesser degree "infant training industries." (I do not intend to distinguish in this definition between "training" and opportunities to learn that are not formalized training programs.)

> All successful economic development entails both innovative initiative at home and borrowing from abroad. Even the British borrowed many things from the continent. However, if latecomers have the advantage that is sometimes alleged — that they can imitate and select from a much wider range of technological models — this in itself must mean also that the relative importance of infant industries in the total industry mix is increased...., given substitution inelasticities between learning in schools and on the job, even extraordinary success in the spread of schooling cannot meet all the requirements. Under these circumstances we face a circular problem: the potential learning opportunities that infant industries provide depend upon their technologies, and the technologies chosen depend in significant degree upon the human resource mixes that are available.

The essay went on from this point to discuss (a) the "factor proportions problem," (b) the tasks of management in training an entire group of inexperienced workers, and (c) what I termed "the making and circumventing of infant training industries." The concluding paragraph could apply equally to analysis of rural development and economic progress in the "informal" sectors of the economy:[7]

> "... we will gain much more penetrating and also more useful insights into ... problems of economic development when we come to give more attention to how human capacities of various kinds are formed, to the place of job-linked training and experience in these processes, and to the commonalities and diversities of the solutions that can be read from history."

II. The Attributes of Development Man

Whatever the other dimensions of his capabilities, the essence of "development man" is his readiness and ability to adapt to change and to grasp or create new opportunities. Such capabilities can take many forms and appear in different manifestations, but in all cases there is a creative component: there is some potential for this in most men. Thus C.A. Anderson has challenged the essentially static view of "bundles of skills" that has been all too common (especially in the now-waning conventional manpower literature). As he put it:"individuals are rounded persons possessing diverse motivations and capabilities and it is unimaginative to think of them mainly in terms of requirements for a pre-defined occupation.[8] The most important skills may be those that change the profile of the occupation."

My purpose in this section is first to trace the core attributes of "development man" as an active participant in change — adaptive and innovative man. From this I go on to an examination of entrepreneurial and managerial roles and their interrelationships. More conventional approaches to the "skills" that are "required" for development are discussed briefly in relationship to the core dynamic attributes, many of which are not commonly designated as "skills." A summary page or two ties this together with a statement of the relationships among skills, information, and "development man." The important distinction is drawn between "people-changing" agencies and processes and the transmission of information in a narrower and more limited sense.

A preliminary classification of dynamic attributes

It is helpful to distinguish three categories of capabilities within the broad class that I have designated as adaptive and innovative. However, I make these distinctions primarily as a way of illuminating the whole; I am not interested in defining boundaries among these categories. The categories

are as follows:

(1) Speed and efficiency in the acquisition of new skills or the adoption of a new practice when what needs to be done is presented in unambiguous terms. Examples are the learning of a new skill among workers in a plant in which changes in production processes are being made, or the response of mixed cash-and-subsistence farmers to high prices for a familiar cash crop. This is "development man" at the lowest level, but it is also a basic level. Furthermore, we should probably put here a much more subtle and difficult sort of adaptive learning: acquisition of new skills relating to social interaction and to human organization, both in the local and in the larger social-political arena. These social adaptations are surely among the most difficult.

(2) Ingenuity in the creation of new opportunities or of new ways of doing things in response to new opportunities. What is important in most of the LDC's today is not giants of innovative entrepreneurship but the ingenuity of ordinary people challenged by new situations and seeking to overcome obstacles. This may be a matter of ingenuity in finding or creating ways to acquire skills when the more formal, generally visible channels offer only restrictive chances. Obviously it includes the ingenuity of the humblest craftsman in making something out of whatever materials are available to him. But it can also be ingenuity in overcoming or getting around economic barriers to trade — often barriers that have been governmentally imposed, and whether the overcoming is done legally or illegally. At a more sophisticated level, we find ingenuity in redesigning production processes, or in working out new arrangements for buying and selling. It is important to distinguish technological, marketing, and organizational innovation in small non-farm enterprises.

(3) Efficiency in acquiring and interpreting information. It is one thing to make use of information when it is brought to you and interpreted for you as a simple cook-book recipe. It takes more skill to obtain and decode information and to make the decisions of how best to apply it in a relatively complex situation. This handling of information above all marks the "development man as entrepreneur" — whether his domain is agriculture, non-farm enterprise, or a household, and whether in private business, collective, or government undertakings. It is the core of what T.W. Schultz has in mind when he speaks of the "ability to deal with disequilibria."[9] This concept had its origin in studies of what determines productivity in agriculture; he contrasted an old, static, traditional agriculture with an agriculture that is being transformed.[10] The scope for exercize of what he labels the "ability to deal with disequilibria" depends of course on the magnitude of those disequilibria — of the gaps between what is being done and what would be realistically possible. Clifton Wharton expressed this idea a decade ago in specifying what is needed in education for agricultural progress: "Thus, the divergence between the actual levels of economization and the optimum levels, as determined by the logic of economics, provides a crude measure of the exploitable gap for achieving more rapid rates of growth."[11] Evidently, whatever the economic domain, the search for opportunities must be an important component of "dealing with disequilibria." So must ability to conceive, at least in broad terms, a picture of how things will look in the future.

Entrepreneurial and managerial roles

These attributes of development man (and woman) clearly overlap, but do not by any means fully coincide, with the qualities that may be regarded as requisites for successful entrepreneurship. If we say that development requires capability in operating enterprises of middle size, which would fill

some of the gaps between the large corporation and the tiny local enterprise, a fair number of people must develop the attributes needed to conduct these middle-scale firms. They may be non-agricultural; most of them would be. But they may also be in agriculture or closely related to it, as in the operation of local stores selling seeds and fertilizer or in managing marketing cooperatives. The managerial component in entrepreneurship will be associated with the scale of the enterprise and the need to coordinate the work of more people and/or with the complexity of the financial and material accounting that is needed.

Peter Kilby listed thirteen "entrepreneurial roles," which he grouped under four main headings: (1) exchange relationships, (2) political administration, (3) management control, and (4) technology.[12] As he described (2) and (3) they contain no innovative energy, let alone anything like Edwin Gay's "disruptive innovative energy." Category (2) included dealing with the public bureaucracy, managing human relations in a firm, and managing relations with customers and suppliers. Category (3) covered financial management, control of production in written records, inventory control, and so on; accounting skills are a part of this. But the "ability to deal with disequilibria" requires something more than keeping track of incomes, balance sheets, and inventories; it calls for flexibility and creative adaptation in developing and operating the internal information system and its application for both relatively routine controls and for more important or critical decisions. The items noted by Kilby under categories (1) and (4) include some elements of more imaginative entrepreneurship along with relatively routine managerial functions. Thus under (1) he includes "perception of market opportunities, novel or imitative", and under (4) he includes (along with more ordinary specifications for efficiency) the upgrading of processes and product quality and introduction of new production techniques and products.

The distinction between "formal" and "informal" economic sectors is common in writing about LDC's, but rarely is it analyzed systematically. Instead, this terminology is commonly associated with assertions of dualism between the large "modern" high-wage, capital-intensive undertakings and the rest of economic life. But however great the gulfs in particular cases, there is clearly a scattering of potentials (realized or not) over a considerable range in a continuum of sizes of enterprise and degrees of impersonality of operations. Governments can inhibit or even prohibit the realization of such potentials, but let us assume a more favorable situation for the small enterpriser. If his success is identified with growth of the undertaking, then he must learn to cope with managerial problems that will increase along with his successes. The small man with limited education who can accomplish this sort of transformation may be exceptional but he can be found in every society where there is a supportive economic and social environment.

It would be a mistake to define success primarily in terms of expansion of the enterprise and its conversion from a relatively non-managerial to a highly managerial sort of undertaking. Even in the economically advanced nations we do not define the success of a doctor or a lawyer by the size of his payroll or by the number of people he employs. Neither should we define the success of an indigenous craftsman-enterpriser mainly in terms of how many people he hires. Yet, paradoxically, this sort of quantitative assessment is precisely what many people writing on economic development tend to make, disregarding the fact that ten independent craftsmen is as many people as ten hired craftsmen. Even those who decry the conditions of work that are associated with bigness seem to have this bias.[13] We must remember that the generation of employment opportunities is not a matter of

direct provision of many places in each of a few large units, public or private. It is a matter of the wide spread of employment opportunities, whatever the sizes of individual undertakings. The cumulative effects of small activities can be to generate more numerous and widely diffused economic opportunities, whether for "work" or "jobs," than are generated by the big "modern" firms.

Small-scale, locally rooted businesses can be viable in rural areas in particular, but also in all sorts of communities. These typically call for a different mixture of capabilities: rather modest requirements of strictly managerial type and more of the craftsman and artisan skills than would be suggested by Kilby's list, along with plenty of ingenuity in seeking out opportunities and in devising ways around obstacles. The sorts of nonformal and informal job-linked learning and training will also be different from job-linked human resource formation in larger establishments.

These contrasts of scale do not mean that the demands upon strictly entrepreneurial capacities are low in small-scale firms. Indeed, Kilby has referred to the "extraordinary qualities required of entrepreneurs" in the contemporary underdeveloped world. One appreciates his statement if one takes into account pervasive ignorance, segmentalization of markets, impediments to factor mobility, multiplying administrative controls, and so on. Businessmen in the LDC's have to deal with lack of adequate infrastructures, including poor transportation, disrupted communication, and scanty credit facilities. It is all too easy to underestimate the imagination and innovation required for any real break-through to sustained development. Imitation without creative adaptation is not enough.[14]

The household economy **20**

In most societies, agriculture is a family activity — plantation systems

aside. This is true even though marketing cooperatives or other collective organizations may play an important part. Many small-scale businesses are family enterprises. It should not surprise us then to find, for example, that the education variable that was most powerful in explaining differences in rates of adoption of new processes in an Indian study was a variable that summed up education of the household, not merely of the husband.[15] It is artificial in many cases to separate activities in farming or in small business from the economics of the household. But there are other aspects of the household economy that call for attention, even though space permits only a few comments.

The concept of "development man" is relevant to many aspects of the household in addition to production for markets. T.W. Schultz has developed his theme of "ability to deal with disequilibria" in applications to both men and women, in both household and other activities. He provides a tidy summing up that is oriented to women and their education:[16]

> "...it is the wide array of effects of the education of females that the investors in education in the developing countries can ill afford to overlook. The organizational efficiency of the household and its contribution to family consumption appears to depend in substantial part on the level of schooling of the woman. Most women in the developing countries are poorly equiped in terms of the schooling that is required to manage their households skillfully in taking advantage of new technical information with respect to nutrition, health, and child care. Another favorable effect of the schooling of women is the improvement in their ability to decode, interpret, and successfully adopt the new, superior contraceptive techniques. The acquisition of more schooling by females tends to raise the age of marriage, a potent force in reducing fertility....The most important effect of the schooling of females may well be the special benefit that arises out of the marked advantage that children derive from being reared in homes where the mothers have this schooling.

Whether or not this particular analysis of how schooling affects fertility is accepted, few would challenge the proposition that education of women is important for societal welfare and in the longer run for economic development.

The linkage lies in the three effects Schultz listed: effects on consumption (illustrated primarily in terms of health), effects on fertility, and effects on the quality of home environment with their implications for the education and productivity of the new generation.

The population issue is important and the processes affecting fertility are complex. One of the most illuminating pieces of research on this subject is work done by Ben-Porath for Israel.[17] His work is interesting especially because it provides us with information about subpopulations with quite sharply contrasting historical backgrounds but living within the same small state. Ben-Porath started with a theoretical and empirical exploration of the essentially static sort of micro-decision model that has characterized an important body of recent research on the economics of fertility. But he added to these studies, which are deficient in dynamic components, some questions about lags in adjustments to changing conditions.[18]

> "Obviously, if differences in fertility between couples at any point of time are dominated by differences in the speed at which people perceive and adjust to a new level of optimum family size rather than by differences in the optimum size, then differential fertility (in a cross section) cannot be the testing ground for hypotheses that 'explain' differences in the optimum (desired) family size, even if the latter were relevant for the long-term development of average fertility. Conversely, the theory that would be required to explain differential fertility is in such a case more dynamic than what we have at present".

This more dynamic view would extend the fertility argument presented by Schultz to consider how education may affect the speed with which people come to perceive changes in conditions and how those changes in turn may affect their optimum position with respect to family size.[19] Research is only beginning to open up toward greater understanding of these societal processes, but there can be little doubt that education does affect fertility behavior through what it does for "ability to deal with (including to become more rapidly aware of) disequilibria"— and probably also through related changes in perceptions of the good, or at least the not-so-bad, life.

Skills, information, and "development man"

The component that is common to the various attributes of "development man" is his adaptability to and participation in the generation of change. Most of the writings on how schooling is related to labor markets -- and work on manpower planning in particular -- reflect implicitly an assumption that we turn out a finished product (whatever its quality) ready for use on the job. Frequently such writers have criticized the schools because "the new graduates are not yet ready to do anything." Gradually more attention has been paid to skill obsolescence and to the need for retraining as part of educational and manpower programs for adjustment to a world of change. But this view of things is at best a sort of "comparative statics." All learning is seen as learning-to-do; there is no learning-to-learn.

That new skills in the limited, finished product, sense are interwoven with economic development will be questionned by no one. But this has implications that go beyond the comparative statics of learning-to-do. The changes of a developing economy make some of the older skills obsolete or inadequate, just as they call for the learning of skills that are new to the people of a particular area or nation -- and those changes take place within the span of a man's working life. In fact, even in a traditional and relatively changeless world there are life cycles of learning in which people build upon previous skills and upon unfolding experience to acquire higher skills; they also change types of skills as the years of their lives go on. Even in the most traditional society, learning-to-learn over the life cycle will be important along with more direct learning-to-do. But this distinction is more important for the analysis of human resources and their formation the more fundamental the changes that are taking place and the greater the pace of change.

To recognize the importance of the distinction between learning-to-learn

and learning more directly to do implies a corresponding recognition of the related commonalities in the nature of skills that may be otherwise very diverse. Managerial and marketing skills in a relatively changeless world may have little more of the "development man" component than the manual skills of the least entrepreneurial of artisans. So long as markets, resource availabilities, credit agencies, and so on do not change, people can go on doing the same things without search, innovation, or the risk-taking that is associated with new ventures and new ways of doing things. Even large enterprises can be traditional and relatively unchanging, as every comparative economic historian knows. However, more complex large-scale modern enterprises usually have some built-in element of change generated by the very information and control systems that maintain operations in a reasonably orderly way. Similarly, long-established marketing channels and communication networks may suffice for buying and selling in a traditional setting. But changing conditions and more distant markets or sources of supply necessitate the acquisition of new information, often of new kinds. Search processes in a context of change call for more aggressive orders of entrepreneurship, including the search for entrepreneurial opportunities themselves.

It is in the context of change that another distinction must be made explicit, the distinction between two functions or types of "education" very broadly defined: (1) the formation of capabilities, and (2) the transmission of information. The former does something to people — the acquisition of manual or technical skills, of clerical or accounting skills, of social and political skills in interacting with people and perhaps in supervising them, and above all the acquisition of competence in seeking out, assimilating and interpreting information. The transmission of the information is something else. The ease with which information is transmitted clearly depends upon

the readiness of potential recipients to absorb it, but most of the day-to-day flows of information that are necessary in the operation of an economy that has moved out of the subsistence phase cannot be regarded as "people-changing" except in the most indirect and usually superficial ways. Education more fundamentally conceived is complementary, not coincident, with the transmission of information.

III. The Formation of Competencies and the Transmission of Information

> Any meaningful examination of interrelationships between economic development and the formation of human resources is of necessity a study of both institutional stabilities and social change. Central questions are then concerned with what induces, sustains, or dampens social change and in what ways. The pace of change, measured in units of a man's working life, is reflected in changing ways of forming human skills. The specific arrangements for training can take many forms: in school or at work, formal lessons or the incidental learning-by-doing that accompanies most economic activities. Economic development follows more than one path, but certain basic kinds of questions about the forming of human capabilities occur in each path.[20]

These words refer primarily to people-changing functions of education, and more specifically to the formation of competencies. However, the primarily complementary (though sometimes in smaller degree substitutive) processes of transmission of information may be best understood in relation to the ways in which human competencies are formed. Particular agencies and activities vary in the degree to which they are primarily people-changing or primarily information-transmitting. Analytically, it is useful to begin by looking at the formation of competencies. (I shall consider attitude change only as it may be interlocked with the formation of competencies.)

An economic analysis of people-changing processes

In the same essay from which I drew the above quotation, C.A. Anderson and I outlined four main aspects of institutions for developing human resources:

(1) How separate is responsibility for making certain that children are educated from the actual provision of the education? This question could be extended to adults; that extension would raise some interesting questions for policy in the poorer LDC's. (Note that this first point automatically implies that "education" is not merely formal schooling.)

(2) How specialized is the training agency — specialized both in the content of what is taught and in the kind of learning opportunities provided? Specialization can run all the way from particular component skills of a narrowly delimited occupation to the diverse programs offered in a large university. No single training agency ever includes all types of skills and capabilities. Particularly important is whether there is specialization to education or a combining of education and training with production, and if the latter the dominance of production over training or vice versa.

(3) What kind of economic "attachment" (claims and obligations) does the learner have to the supplier of his training? And for how long a time does that attachment last?

(4) How are the costs of training shared, and what part of those costs are paid by third parties (eg. the public or a philanthropic agency) rather than by those who receive or provide the education?

Space is not taken here to discuss systematically Items (1) and (4) and their implications, although they will come up incidentally in other connections. A couple of illustrations will suffice to suggest the importance of both (1) and (4) in the present context. Notice that for older youths and adults Item (1) could lead directly into some of the recent proposals in certain LDC's to encourage "self-education."[21] Together with Item (4), this dimension of educational institutions and processes is of course related to the emphasis on "self-reliance" in China and Tanzania today (as for the United States in earlier periods). Also of particular interest in connection with Item (4) is the nature of traditional family systems. Often the larger family not only takes responsibility for formal schooling of its members but also supports periods of job search or apprenticeship arrangements that delay earnings. The concept of "opportunity cost" is of course crucial for

understanding the spontaneous emergence of learning and training practices outside of schools, whether formal or informal in organization.[22] Opportunity costs are important in understanding how individuals respond to learning opportunities offered by the state, as are perceived benefits of participating in an educational activity.

Items (2) and (3) lead us most directly into two sets of questions that call for more systematic analysis: (a) the relationship between type of skill or competency and how it is best acquired, and (b) the relation between "skill mobility" and the extent and structuring of job-linked training. I take up the latter, which is bound up with Item (3), first. (References to Item (4) will be drawn into this discussion as needed.)

Skill mobility and the markets for "jobs" and "work"

With the important exception of research in agriculture, most of the recent theoretical and empirical work in the economics of human investment has been oriented to labor markets in which men are wage or salaried workers. These are "jobs" in Kenneth King's terminology, at whatever level of skill and responsibility.[23] The important distinction between "general" and "specific" skills derives from analysis of markets for wage and salaried employment. "General" skills are fully mobile skills; they can be carried over from employment in one firm or agency to another. "Specific" skills, on the contrary, are relevant only to the firm or agency in which the skill was acquired. I call these "Becker-general" and "Becker-specific" to identify these terms with the man who developed this important analytical distinction and to avoid confusion with the use of terms like "general" and "specific" in casual ordinary conversation. The nature of a skill may make it at least potentially "general" or inherently "specific" in Becker's formulation. However, legal or other institutional constraints on mobility between firms or agencies

can bring it about that potentially general skills become economically specific.[24]

Most economic activities contain both Becker-general and Becker-specific components. Even a widely applicable competence such as that of a secretary, for example, is in fact a combination of capabilities that can be carried in full from one place of employment to another and of capabilities that derive from knowledge of the habits of the boss and the people with whom he is in frequent communication. (By contrast, one who merely types has few inherently "specific" skills.) Which sorts of manual work will have large Becker-specific components depends in part on the scale of the economy. In a small country with only one spinning mill, the skills of machine operatives will be in part Becker-specific because of the costs and other impediments that interfere with migration to work in spinning mills in other countries. In a larger, industrialized economy, there would be a comparatively small Becker-specific component in the skill of a spinning-machine operative. The Becker-specific component would not be totally eliminated, however. There is always some initial learning even by an experienced worker when he takes a job in an establishment in which he has not worked before. Furthermore, the delay before he becomes fully productive can affect the productivity of his co-workers. Organizations are not just plans on a piece of paper, they are systems of personal interaction.[25]

The most important contribution of the modern theory of human investment has been in its generalization to the entire life cycle. This is not just a theory built around schooling. Unfortunately, this fact seems to have been recognized by few people outside of the specialists. Even the increasingly popular writings of economists on "internal labor markets" commonly fail to see the relationships between what they are trying to do (in a more socio-political than economic vein) and the analytical contributions

of human-capital theory. This is unfortunate, because anyone who is really familiar with modern human-capital theory will almost inevitably ask two very pertinent and down-to-earth questions about learning and training at work. Both of these questions are of great practical importance to policy makers and their aids. (a) What, under present circumstances, are the incentives to a businessman to provide learning and training opportunities for his employees — and would the contemplated policy or policies favorably affect those incentives? (b) Are circumstances such as to encourage individuals to choose jobs with better earning prospects at the cost of forgoing higher immediate earnings? This second question is quickly extended to other variants of choosing and paying (directly or indirectly) for opportunities to receive training in a working environment. And here again, we may ask what policies affect these options and individual incentives favorably, what discourages investments by individuals in themselves?

Neglect of economic incentives and responses to those incentives has led to many false moves in economic and human-resource development policies. Among the clearest examples have been some of the misplaced efforts to persuade business enterprisers to make particular commitments to the development of capabilities in those they hire. When does it pay the enterpriser to incur the costs of doing this? Evidently it will pay him to put out money for training and/or to put up with initially reduced output only if he can get a return in the form of a share in the increased future productivity of the trainee. But this is possible only if the trainee stays long enough in the firm; unless the employer can have a reasonable expectation that this will be the case, he will be disinclined to pay the costs of training.

It is easy to give examples of frustration of efforts to encourage training within business firms. It is hard also to enlist employers in sponsoring their own workers for training outside the firms. But there have also been many ways in which these problems have been circumvented in one place or another.[26] Here I give just one quotation, from John Wilde's essay on non-formal education for small enterprisers in India, where he speaks of experiences with attempts to foster sponsored training:[27]

> "... it is clear that the whole concept of sponsored training has not worked out in accordance with the original plans. Many employers have in fact been reluctant to sponsor their own workers for training, and in many cases they "sponsor" trainees who have actually never worked for them. Employers are disinclined to spare their own workers during an extended period for training, all the more since only a small percentage of the truly sponsored have in practice come back to work for them. Employers have apparently been unwilling to pay the higher wages to which workers considered themselves entitled after training."

Other problems, observed in Brazil, for example, relate to the difficulties an employer may have in jumping a young man ahead of workers who have higher seniority but who have not acquired the higher or newer skills. It is often easier to bring a skilled young man from outside the firm because this is less upsetting to the human relationships of an ongoing production organization. The economics of this is very real to the entrepreneur.

Training for which the employer bears the full cost or most of it is one thing; training in the form that may nevertheless be paid for directly or indirectly by the worker himself is something else. Normally, if there is no intervention by subsidy or penalty on the employer, the trainee or his family bears the main burden of learning skills that can be used just as well outside as in the firm in which they were acquired. This payment may be mainly hidden, in the form of lower wages during the training period than could be obtained in jobs that do not contain a human-investment component. But this contrast brings out the fact that a legal minimum wage widely applied can inhibit the emergence or continuance of learning opportunities where the

immediate productivity of trainees (minus any direct costs paid by the employer) is less than the legal minimum wage. In fact anything that leads to rigidity in wage floors for young or newly hired workers, whether through legal controls or for other reasons, discourages expansion of opportunities for learning at work — formal or informal. And that damper on training and learning is most serious for the learning of skills that would have wide applicability elsewhere in the economy. This problem may be especially important for enterprises at an intermediate scale of operations. The surprising thing is not the limited development of intermediate skills and technologies, but rather the ingenuity with which some of these problems are circumvented and overcome.[28]

An illuminating illustration of both ingenuity in the devising of a training system and the importance of freedom from wage controls in doing so is provided by the story of Indo-African skill transfer in Kenya, described for the construction industry by Kenneth King. That history provides evidence at the same time of how an attempt to restrict or control activity in one direction may have quite unexpected results, in seemingly unrelated spheres of activity. Thus an Africanization campaign that restricted non-citizen (usually Indian) trading in rural areas (and in selected other activities) had the unforeseen result that Indian capital moved from trade into construction. Efforts to Africanize selected categories of skilled personnel, (including foreman-supervisors) led in many cases not to substitution of African for Indian foremen but rather to the transformation of the Indians into self-employed contractors who got their capital from the Indian trading sector. King writes about the Indian success in competition with British firms:[29]

> Apart from more competitive tendering, a very important reason why the Indians found it possible to cut the British firms out of all but the very largest contracting operations was that their traditional approach to training and promotion was beginning to pay dividends. Equally, they had been able to adjust to the government restrictions

> on mistris much more rapidly. On the training side, two processes can be identified at the beginning of a typical large Indian-directed contract. First, in addition to the small core of experienced men attached to the firm, some extra skilled men will be hired — not on the basis of paper qualifications or trade tests ... but through the recommendation of someone already in the firm. Secondly, a large number of casual labourers will be taken on, on a daily basis. Some of these may well be slightly more skilled than others, but they will all be started at the minimum rate of casual labour ... As work progresses over a period of months, this casual labor force will differentiate itself, with the more enterprising being rewarded by a higher daily wage, and the more responsible getting an opportunity to organize a part of the job on a piece work basis. It is in this latter readiness to grant small subcontracts to some of the more talented, originally day, laborers that the Indians began to throw up a whole series of petty labor contractors.

Notice also that by these arrangements the Indian contractors enjoyed a nearly costless system for obtaining information about the work force, and could select the most able and diligent for training for more demanding work and for increasing responsibility. For the workers this meant progressively greater learning opportunities, until they were ready to become subcontractors. Under the pressure of competition with the rising Indian firms, some of the British firms have gone over to subcontracting, which enables them to avoid the payment of wages to casual labor at the official, much higher government rate, paid by larger firms. But there has also been a diffusion of economic endeavor and levels of skills along a continuum instead of in a polarized system.

Freedom of movement in the use of skills characterizes other apprentice systems by which manual skills are being transferred from some Africans to other Africans. These are the "open" apprentice arrangements, which have appeared in other countries as well. Quoting again from King:[30]

> "This may be termed the unofficial apprentice system which operates outside of the government's recognition and is in fact a direct contradiction of the principles of training embodied in the Industrial Training Act. Briefly, it is a process whereby school leavers whom the educational system has left without any marketable skills attach themselves to a craftsman, or 'fundi' as he is called locally, and actually pay him to show them the basic trade practice."

In paying the master for the training, the apprentice remains entirely free to leave when he wishes, without subsequent work obligations. These examples refer to relatively low-level manual skills, however. The finer, precision skills are not transferred in this way, nor are the more sophisticated sorts of entrepreneurial competence.[31]

How different types of competences are acquired

Inevitably the foregoing discussion of skill mobility and of the economics of investments by firm and individual in on-the-job learning (or apprenticeship) leads us into looking at the sorts of skills that are learned. It is time now to take another orientation, to examine complementarity and substitution between schooling and various non-school opportunities for acquiring capabilities of different kinds.

But first I say a word about what a "school" is. For the present purpose I define a "school" as an agency (or a subdivision of a larger organization) that specializes in instruction, that brings people together for that instruction, and that has a core curriculum to structure the instruction. The specialization on group instruction precludes classification as a school, by this definition, of the teaching of literacy to his apprentice by a journeyman blacksmith, for example. Perhaps we should exclude also the early Kenya mission (and government) programs for youth beyond the fourth year of primary school as King describes them. However, these arrangements may have been labeled, or mislabeled, at the time; a substantial part of what was provided was a form of working apprenticeship. The pupils worked for the mission or the government for the major part of their time:[32]

> Manual Instruction as it was, for instance, designated in the Scottish primary schools bore no relation at all to what was being implemented in the major primary schools in Kenya. The instructor who moved ... from Aberdeen primary schools in the 1920's to being an industrial missionary in the Church of Scotland's main primary schools in Kenya

> went from a situation where manual instruction was something of an educational extra, not the least related to production, to a factory system where the schools indentured their technical students for the first three years of a five year apprenticeship. Such students worked daily as masons, carpenters and blacksmiths, from 7:30 a.m. to 4 p.m. for their last three years of school, and were encouraged to partake of night school for two further hours after work.

We might split off the night school part of this program and call them schools, but that is all.

What King speaks of as "detechnicalization of the primary schools of Kenya" may be seen in broader perspective as an occurrence that has been repeated in many places and times. This is the extension of general schooling for the mass of the people to progressively higher levels (in this case to seven or eight instead of four years) and the postponement of apprenticeship. The distinctiveness of the Kenya case is the particular role of missions and government. As King shows, for a majority of Kenyan Africans, the point for leaving school and for entry to on-the-job learning and training of one sort or another is now at the end of seven instead of four years. (Probably it is being pushed further upward with the increase of secondary school completers.) But most apprentice activities of the present day are generated spontaneously, without government participation or sponsorship. Obviously, if we defined "schools" so broadly as to encompass the early mission and government apprenticeship systems, there would be no meaning to discussions about what schools do and what might most effectively be done in other ways.

It is important at this point to emphasize, however, that exclusion of apprenticeship schemes from the definition of a "school" does not mean that I accept the narrow definition found in some recent literature — whereby a school is virtually by definition extremely formalized, with a rigidly structured system of progression through academic routine learning to successive selection by examination. We may reasonably ask how far Griffin's specification[33] of "Non-formal Educational Responsibilities of a Formal Institution" may be

fitted into programs in schools. This is a very different thing from the use of the terms "formal" and "nonformal" to mean in school and organized out-of-school education respectively, as these terms have been used by ICED and the World Bank. In fact out-of-school education can sometimes be quite formal and education within schools can be quite informal in modes of instruction and in general atmosphere. If the word "formal" refers explicitly to the organization of the educational activity, then we would be better off to say that schooling is one type of "formal" eduaction, and to distinguish school and non-school formal education (as Clifford Wharton did a decade ago). I prefer to consider degree of formalization as a continuum with two dimensions, in organization and in social atmosphere. Extreme formalization along both dimensions is exemplified in routine learning in schools that are tightly locked into a rigid examination and certification system. Movement in that direction, whether within or outside schools is unambiguously movement toward formalization. Evidently, to contrast what is most readily done in schools with what is best done elsewhere is not to sort out what must be fitted into a rigid certification structure from what is better left more open. The certification syndrome is not confined to school systems;it can be part of a tightly structured apprenticeship system as well. Obviously, in any particular situation one must take into account the constraints on flexibility within a school system that arise from past established ways of doing things and from resistances to changing them. The adoption of new methods (and in particular of new patterns of human interaction) is as difficult in schools as elsewhere. One may question whether schoolmen are likely to be the most socially and organizationally innovative people. We may suspect that they usually are not, given self-selection into work in which there are strong incentives to conformity and weak ones to innovation.

Questions that we may ask when we try to sort out the ways in which men may most readily and economically learn this or that, in a school setting or elsewhere, are first of all question as to what sorts of learning are best done in an environment that is deliberately set apart from everyday life. In contrast, what is best learned in situations in which the learners are direct participants in or observers of ongoing productive, political, or social activities?

The underlying economic logic that guides the location of various sorts of learning may be brought out by considering questions such as the following:

1. How widespread is the demand for a particular skill; in how great a range of jobs can it be applied?
2. How rapidly is the skill or competence likely to become obsolescent?
3. How readily is a particular skill or set of skills or competencies learned in one sort of situation compared with another situation?
4. How great is the forgone working time or, more generally, forgone productivity of the learner in one context compared with another?
5. How does the presence of learners in one situation or another affect the productivity of <u>other</u> people?
6. How do costs of the equipment used for training compare in one alternative versus another? How serious is the problem of obsolescence of equipment?

No single one of these questions is enough; it is their intersection that provides our analytical guidelines. Furthermore, we must look at how these considerations may converge to determine the relatively spontaneous behavior of those supplying and those demanding educational and training services. But we must also look at the broader societal convergence that might be realized if we had policies that remove discrepancies between private incentives and the social interest. Certain aspects of this incentive question were discussed under the heading of "skill mobility and the markets for 'jobs' and 'work',"

and the incentive question will come up again. However, in the immediately following remarks I bypass the question of discrepancies between private and social interests by taking a societal perspective. I bypass also more philosophical issues concerning what are "societal goals" or what is "in the public interest."[34]

The first three questions listed above refer to the learning process, and implicitly to the benefits that accrue from it. The last three refer to relative costs of accomplishing any given result in one way rather than another. But there may be severe limits to possible substitutions in ways of learning some things. In most situations it would be closer to the truth to say that what is learned in school and what is learned in other situations or from other agencies are complementary. Where out-of-school instruction is used as a substitute for schooling, especially in the earlier years, it is an "inferior substitute" for schooling — often for schooling missed in the past by older youth and adults.[35]

Since the concern of this conference is with rural people and rural economic development, we can ignore education for those who will become managers and high-level technicians in large modern enterprises, although we will have to consider at some point the education of those who serve rural people and the rural economy, whether as researchers or as purveyors of education and information.

Items 4 through 6 in the above list have their most obvious use for comparisons of the costs of forming skills that are relatively narrow, and when there is at least the possibility of substitution in loci and methods of training. Evidently, where learning and working can be combined there will be less foregone production than in full time schooling. But this assumes the same learning in the same elapsed time. If the learning at work is slow, to reach the same ultimate goal may ultimately mean fully as much foregone

earnings. Possession of some prior schooling can facilitate learning at
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work. Notice that in talking about Item 4 we are already involved in the first three items on the list, for if we are to compare costs we have to ask costs of learning what and how well people learn in a given situation.

Item 5 of the list has two major facets: the foregone production of the teachers or trainers, and foregone productivity of those who work along side a trainee. The latter problem may be especially important for informal training as a participant observer; such costs can be very high in complex production orgnaizations, but may be much less in less structured and smaller enterprises. Coming to Item 6, we must consider both the proportion of time that expensive equipment may stand idle and the importance (or unimportance) of its obsolescence for what is learned. On all cost criteria the training system developed by Indians in the Kenyan construction industry, as described by King, is clearly very efficient; virtually no real output is foregone by anyone and little or no equipment is taken out of production for use in training. Also, what is learned is relatively well suited to rural demands on skill and resources. The "open" African apprenticeship schemes also pass these tests. Both of these sets of activities in Kenya were "unplanned" in the sense that only buyers and sellers of the training were involved, without participation of any third parties (governmental or otherwise). That very fact guarantees the immediate relevance of the training, whatever its associated limitations. But we must recognize also that the economic efficiency of these informal back-street arrangements, which are not recognized officially, is realized only for a low level of either manual or potential entrepreneurial skill. The substitution of trade training at the junior level, as at Kabete, may result in a somewhat higher level of manual skill. (Skills acquired are of course totally non-comparable with those acquired in the formal post-secondary

apprentice arrangements of the British system both in costs and in the future positions that will be occupied by trainees.) It is important to recognize also that informal arrangements for manual training depend upon having people with the skills that are to be transmitted. In the Kenya case these were mainly Indians but also, significantly, Africans who had become "jacks-of-all-trades" by working for the large-scale farms of the white settlers. There are relatively few such Africans, but their skills are being diffused.

Debates about "vocationalization" of schools are perennial and frequently fruitless. But these debates also are the meeting ground on which it should be easiest to sort out the issues. There is much to be said for the position taken by Mark Blaug, drawing on both economic analysis and empirical evidence:[37]

> "...to ask schools to prepare students to take up clearly defined occupations is to ask them to do what is literally impossible. The most that schools can do is to provide a technical foundation for on-the-job acquisition of specific skills.... The notion that there is one kind of education, called general education, which has nothing to do with the world of work, and another called vocational education, which is firmly geared to the 'needs of a growing economy,' is part and parcel of the rhetorical folklore that continues to impede rational educational planning in developing countries."

Drawing on the criteria specified in Items 1,2, and 3, above, I would wish to specify, however, a definition of "general education" that may differ a little from Blaug's. Academic classical education is not general education in a fundamental sense; rather, it has been and is education oriented to very special occupational roles in a particular societal context, and therefore is, paradoxically, quite narrowly "vocational." On the other hand, there is a substantial "general education" component in clerical and related curricula and in some basic components of technical and trade education. In particular, so long as demands for skills and productive opportunities are

undergoing change over the normal working lives of most men, the case is strong against using schools for types of training that have a narrow range of applications and high potential obsolescence. This generalization is valid for the population as a whole. It is an even more valid conclusion for the schooling of most people living in rural areas.[38] I shall return to this point in Sections IV. and VI.

The range of skills and capabilities that are important for development, and for rural development in particular, are much wider than the endless arguments about "vocational" education would suggest. If we state Items 1, 2, and 3 in the most general terms, several things are clear. It is evident a priori that the advantage of giving education in schools will be greater, other things being equal, when the competencies to be developed have wide applicability, when they are slow to obsolesce, and when they can be learned in a context that is quite separate from that in which they will subsequently be used. These conditions obviously apply to the learning of literacy and numeracy, and they apply to technical and managerial skills for which literacy and numeracy constitute the most critical and direct prior requirement for learning. But how far the schools can go in teaching skills of social interaction and of social organization is less clear. Furthermore, these latter are among the most subtle capabilities and the most difficult ones to acquire when they differ from traditional patterns. Such disparities become increasingly important as the scale of operations increases and also with the necessity for more communication and for contractual arrangements of a relatively impersonal sort. The latter are just what occurs in an expanding exchange system. This is one of the situations in which the complementarity between fundamental competencies best taught in schools and learning by experience is most evident. Kilby's comments on how difficult

it is to form entrepreneurial skills are worth quoting here:[39]

> Our thesis concerning entrepreneurial task performance is as follows: where similar activities have existed in traditional or semi-traditional society, as in the case of exchange relationships and "political administration," those social mechanisms which transmit the required skills and attitudes from one generation to the next provide the necessary conditioning for effective performance in parallel if somewhat more complex roles in the modern entrepreneurial setting. Where there are no transmutable anticedent roles, particularly if the absence of a positive tradition is reinforced by inhibitory social structure influences..., then we may expect low levels of intensity and proficiency in carrying out these particular functions.

Kilby gives as examples the synchronization of work of various individuals or groups, controls for quality, standardization, prevention of wastage of materials and control of production flows and inventories. Problems may be especially severe where traditional roles have been highly "diffuse" — that is, where the performance of traditional activities is "intertwined with the performance of other basic social functions...This relatively heavily laden social situation is governed by canons of etiquette which preclude the use of direct sanctions to correct undesired work performance." Kilby and others have observed the strong reluctance of "superiors" in many cases to concern themselves regularly and constructively with the performance of those working under them. Anderson summed up in more general terms the contributions and limitations of schools for development of adaptability and entrepreneurial competence in these words:[40]

> The most generally applicable basic skills that facilitate future information gathering and learning tend to be taught in schools. However, the know-how that enables a man to adjust promptly to new situations, to work with others, or to have assurance in making effective decisions — these skills usually can be developed only in a work and decision situation.

This statement is a specification also of the essential complementarity between learning in school and learning informally "through experience." Success in economic decision making requires the ability to assimilate and

to interpret a continuous flow of information, and it requires also assurance and skill in dealing with people and with organizational problems. These skills are developed only through experience. Out-of-school "basic education" is a very poor substitute for education in schools as a basis for learning "abilities to deal with disequilibria" beyond the most rudimentary adaptations. And so we come back to the relationships between people-changing activities and the transmission and assimilation of "information."

"Information fields" and "resistances"

The heading of this sub-section is taken from the Swedish cultural geographer, Torsten Hägerstrand.[41] His seminal work on the diffusion of innovations has won world acclaim. It will be enough for present purposes to sketch a few of his ideas as most immediately useful for our purposes.

Hägerstrand's formulation has two main components: a) an analysis of the nature and operation of "information fields" through which messages flow among the members of a society, and b) "resistances" (or conversely) to changing one's behavior in the light of the information received.

"Resistances" include all those aspects of a situation that inhibit (or support) application of the information. Some of these resistances will be economic: lack of necessary complementary resources, inadequacy of the infrastructure in transportation, and so on. Also among "resistances" we must put the disinclination to undertake a task that is unfamiliar, one that seems to threaten established relationships or to involve undue risks. Limited education and lack of ability to decode the information and interpret it for complex decisions is obviously another factor. Negative factors raise the chances of failure and diminish ability to deal with risk and to minimize it. The converse of all these things is of course favorable to the translation

of information into innovative behavior.

The other side of Hägerstrand's model, his "information fields," is more fully developed, and it is from this part of his work that we have most to learn. "Information fields" are informal communication networks as distinct from the public coverage of mass media such as radio, television, and newspapers or other publications. Distinct spatial patterns in the operation of information fields have been identified over a long time span in Sweden, and applications of the model elsewhere have revealed the same essential characteristics.

(1) Direct interpersonal communications or face-to-face "tellings" play a powerful part in the communication of information and, given exogenously favorable conditions, in the assimilation of information and in its effect on the adoption of new behavior. It has been shown that this basic pattern of communication pervades not only the simple, traditionalist societies in which people tend to have unspecialized roles and to interact with each other as total persons. The pattern is present also in societies characterized by complex specialization and by many formal interaction networks of the most impersonal sort. Even where mass media do have an impact, the information so transmitted is mediated through personal communications. These generalizations have great importance for the working out of strategies in the transmission of information to foster improvements in agriculture or to encourage and support other sorts of rural economic changes.

(2) Spatial patterns in the networks of communications are very stable over long periods of time. This is shown, among other things, in the stability of migration patterns when examined in minute detail. The

communication patterns display major and minor nodes from which flows of information go out to other areas. There also is persistence in the patterns in which communications jump across intervening spaces from one center to another, and in the location of "deficit troughs" through which very little interpersonal communication occurs. There is strong evidence to indicate that disruption of these patterns, once they become established, is extremely difficult. These findings have important implications for rural development policies in less developed countries.

Most fundamental is the fact that old traditional routes of interpersonal communications continue to influence these flows even in the changing situations of recent decades. But these patterns are not totally immutable. In the early stages of economic development there are modifications that come in turn to have permanent effects. There may be some important long-term policy implications in this fact. How difficult it is to go directly against the underlying patterns has been demonstrated repeatedly, nonetheless; the most dramatic illustration may be the establishment of Brazilia and its ensuing limited and slow effects on spatial relationships. A more immediate, extremely important implication is that the speed with which new ideas spread and the areas they first reach will depend significantly on strategies in the location of agencies for the dissemination of information and the placing of pilot demonstrations.

(3) The spatial structures of information fields have a wider geographic spread for some sorts of messages than for others. This is related to the fact that the structure of information flows is different for various kinds of groups. The most highly educated typically participate in wider information fields that have a larger geographic range.

This is as true for the LDC's as for more developed nations. It is related to findings concerning the relation between proportions of educated

people in an area and rates of adoption of new practices in agriculture, for example. Ideas move more rapidly across greater spaces when there are many educated senders and recipients of information. But the fact that information fields have socio-economic as well as spatial dimensions raises an important question as to whether, and under what circumstances, localized information fields will carry messages from the better situated and more highly educated individuals to their neighbors. When, on the other hand, will we find "deficit troughs" in communication across social or across geographic space?

Closely related to these last questions (though not part of Hägerstrand's model) is the concept of "interstitial persons" and the related concept of "cultural bridge roles."[42] Both of these concepts have both geographic and social status dimensions. It is not difficult to identify categories of individuals who occupy interstitial places between the cultures and activities of different geographic places and different socio-economic groups in a society. But not all of these sorts of interstitional persons serve the cultural bridge function in the same degree, and some scarcely serve it at all. Indeed, some never bridge the gaps even for themselves. The anomalous position of school teachers in many rural settings is an extreme example of the tensions and discontinuities that may arise. Singleton's observations on teachers in the Philippines and in Thailand illustrate this problem very strikingly,[43] and although the context is quite different analogous problems have been observed in Eastern Kentucky, in the United States. Many years ago I observed the same phenomenon among the "medecine men" on the Navaho Indian reservation, along with the fact that an exceptional individual can have remarkable impact.[44] Plunkett and I traced out these phenomena for a diverse array of "interstitial persons" in Eastern Kentucky, identifying the extent of their associations with and knowledge of "the outside" along

with factors that seem to determine readiness of local people to receive messages from some groups of interstitial persons more readily than from others. These patterns add new dimensions to Hägerstrand's model, but are fully consistent with his basic findings.

These observations must raise the question for strategies in the LDC's: are there important opportunities for using existing informal communication linkages that typically are overlooked in plans laid out by "experts" in central offices? Recent attempts to strengthen so-called "decentralized planning" in a number of LDC's (including the program of the Ford Foundation designed to support such endeavors) may be helpful here, though so far as I am aware there has as yet been little effort to tie these activities into informal networks of communication.[45]

IV. Toward Progressive Agriculture

> Man is the central catalyst in the process of agricultural production... It is man who manipulates plants and animals to provide the food and fibres which he requires. It is man who is the decision-maker in the productive process: what and when to plant, how to plant, in what kind of soil to plant, how to cultivate the growing plant and how to protect it against pests and diseases, and when to harvest. It is man who is the operator in the process: he provides the labor to carry out the decisions by tilling the soil, planting, weeding, etc. Hence, man and his economic behavior are the central starting points in any discussion of agricultural growth.
>
> .... The political, social, and economic institutions created by man also affect human behavior. Other forces and factors are the givens of nature and the limits imposed by current technical knowledge. But man is the prime actor. Consequently, the crucial role of education for agricultural growth is the effect it ultimately has upon the economizing behavior of the farmer and upon the economizing setting in which he operates. It is the economizing behavior of the aggregate of farmers which in the final analysis makes for economic growth or stagnation of agriculture, and it is the economizing setting (institutional and cultural) in which he operates that controls the limits of his economizing behavior.[46]

So wrote Clifton Wharton a decade ago. For him "education" embraced both "formal"and "nonformal" education in the current lingo. His emphasis on the "economizing setting" in parallel with "economizing behavior" points directly to the fact that education for agricultural development must be targeted on many sorts of people. It points as well to the importance of supportive conditions in the infrastructure, credit, availability of supplies of inputs, favorable marketing conditions, and so on. These and other "imperatives for agricultural progress" have been listed sufficiently often. It is vital to recognize, however, that public policies often penalize agriculture, as in the heavy reliance of many of the LDC governments on the "milking" of agricultural marketing boards for the benefit of the public purse. Drains on the potential capital for rural development commonly have been far in excess of what is fed back as services to agriculture. (We should notice also that such "exploitation" of peasants demoralizes them and destroys their incentive to be "development minded." The financial inducements to peasants to raise their production are

weakened, and the peasants are discouraged from using information sources about new farming practices. In these circumstances few will try new practices that entail other than minor changes in their lives and that bring greater vulnerability to inroads by Treasury officials.

Nevertheless, knowledge of what brings agricultural progress has progressed rapidly in recent years. New theoretical and empirical studies have built upon analyses of the efforts to initiate and sustain such progress. The fact that remarkable advances have been made in understanding processes and policies for agricultural development — even though these gains in knowledge are not yet widely known to non-specialists — is not difficult to explain. The contrast with what has been done, or rather what has not been done, with respect to non-farm rural enterprises is equally clear: (1) The farmer everywhere is an independent enterpriser who is obviously an essential contributor to economic welfare, whatever may be the efforts in some societies to collectivize him. Only very recently have we begun to recover from the tendency among most planners to denigrate the small non-farm enterprisers. (2) Furthermore, despite great diversity in agriculture, common elements in the politics and economics of this sector of the economy are evident. Different though the situations may be both among the LDC's and between them and economically advanced nations, the examples set by public involvement in the furtherance of agricultural progress in the developed nations undoubtedly has played a part here. No comparable models were on display for the small enterpriser. (3) Economically naive people can easily appreciate that farmers produce something, but the roles of traders as genuine economic producers frequently have been little understood or directly attacked, and in many LDC's small traders and artisans have come from alien ethnic backgrounds. It is significant that in Tanzania, for example, the most serious rural skill

deficiency identified by a visiting mission was the lack of simple clerical and book-keeping proficiencies needed to serve local individuals and organizations; the priority educational investment accordingly was a training program to fill the void left with the departure of Asians who had performed these services. (4) There has never been any doubt that agricultural progress requires investment in agricultural research and in dissemination of its results, whatever the other requirements might be. There has been a long history of such activities in the economically advanced nations, and attempts to transplant some part of these systems to the LDC's have been many. It was recognized that neither incentives to invest in systematic agricultural research nor the resources to do so could emerge spontaneously from the farming community. Such research is costly, the results always are uncertain in timing and value, and when useful those results will and should be available for use by all farmers. Furthermore, diffusion of practices that increase efficiency in agriculture obviously rebounds to the benefit of the consumers of farm products — which means the entire population. In talking about agricultural progress, one needs always to recognize the vital inter-dependence between town and country, and to perceive how agricultural progress generates other activities in both rural and urban areas.

There is need also for more careful analyses of the conditions influencing uses of time among members of farm families and rural families generally, together with their migration behavior. Both anthropological and economic types of study are required, and should be joined at the micro level. Increasing awareness of the extent to which women are the farmers in many of the LDC's and a new readiness to examine women's roles in the rural economy generally is encouraging investigations and policy analyses that take this much closer look at rural life. Among the more obvious problems is of course the time spent in many cases simply in carrying water.[47]

Target groups in education for agriculture

Education and the dissemination of information for agriculture is not just a matter of education for farmers and for extension agents. There are at least five relevant target groups: (1) the farmers themselves, (2) those who serve farmers directly (as extension agents, community development workers, and so on), (3) those who serve farmers indirectly as buyers and sellers of what farmers produce and use in both goods and services (including managers of marketing boards and cooperatives), (4) those who will engage in systematic agricultural research, to extend the possibilities open to farmers in various types of agricultural areas, and (5) those who will become the leaders and makers of policies that significantly affect the conditions within which farmers operate. (This list is from Wharton except that I have added item (4).) Although Wharton emphasized high-level professional agricultural training for the leaders and policy-makers, we might view the fifth target population more broadly: some understanding of agricultural conditions and problems could well have a place in the general education of all those who are likely to rise to positions of influence in a nation the majority of whose population is rural.

A first necessity of constructive thinking about education for agricultural development is respect for the peasant farmer. Policy makers need to appreciate the shrewdness of peasants' decisions within the constraints of the economic setting and the knowledge available to them. One can still add to horror tales of the myopia of "experts" of various sorts who try unsuccessfully to persuade farmers to adopt practices that are in fact not suitable. Sometimes the recommendations ignore the demands of the new processes on farmers' time at periods when time is short. (There is a saying in Japan that "at harvest time they put the cats to work." Under-employment among farmers part of the time does not mean underemployment

all of the time.) More often, in past years there has been inadequate attention to the risks that a new practice might entail for the farmer; when they take a wait-and-see attitude on new things, farmers are realistic, not just stubbornly conservative. These comments on the Puebla project in Mexico are worth quoting:[48]

> Whether or not the above "opportunity cost" and "risk" hypotheses hold in the Puebla case (which we suspect they do), they certainly are relevant to many other agricultural situations and appear to have been important blind spots in many well-intentioned but abortive efforts to encourage farmers to increase production. Perhaps the most important lesson of the initial period was that agricultural experts who set out to help small farmers are well-advised to find out first of all what practical economic and related factors in the particular situation enter into the farmer's decision-making.

But what of the education of the farmer himself? A basic source of change in agriculture is advance on a wide front in scientific knowledge — ranging from the chemical and physical sciences to hydraulic engineering, among other things. The illiterate farmer may be very efficient within the traditional setting, and there is plenty of evidence to show that farmers quickly begin to increase production of cash crops with which they are familiar when markets for those crops are strong. But to take the lead in coping with new inputs and ways of combining them, usually men need schooling; the extension services cannot substitute for the people-changing effect of schools at this fundamental level. Elementary schooling becomes rewarding when carried far enough that literacy is firmly established.

This brings us to questions of substitution and complementarity among research, farmers' schooling, and the agencies that disseminate information. There are related implications for the education of those participating in diverse ways, directly and indirectly, in the agricultural economy. Empirical investigations unavoidably take existing agencies and their operations as these are or as they have been, not as they might be. It is useful

nevertheless to look at a few results of recent sophisticated studies of these interactive patterns in agricultural change.

Substitution and complementarities among schooling, extension, and research

Systematic, sophisticated analyses of relationships among farmers' education, extension activities, and agricultural research have been coming into full flower during the past few years.[49] These analyses are being extended to explore new agricultural populations and to identify more precisely the processes at work. This research (which has come out of agricultural economics, not education) began in the United States, but then moved to LDC's. There has been some work along these lines in India, in Japan, Korea, and Taiwan, in Brazil and Colombia, and in Kenya. To my knowledge, such research is continuing intensively in a new phase in the Philippines and India, and is spreading elsewhere. Some of these analyses are complex, but the issues raised and the main findings to the present time can be summarized briefly. (Obviously this is not the place in which to elaborate on the methodologies and their implications.)

(1) Effects of research on innovation in agriculture are complementary with effects of both extension work and farmers' schooling. The variables used for research activities are of direct policy interest, since investments in research are a major source of the knowledge that permits improvements in farming — though we must not underestimate the value of the small innovations that ingenious farmers make themselves under favorable circumstances. Some of the most recent studies (most notably by Robert Evenson) have refined this analysis, to identify the differential effects of research that is pin-pointed to the conditions of a particular area, research that is focused on highly comparable areas, and more general research activities. But the research variable is used also as a proxy variable for the gaps that arise between

established practices and economically optimal ones. Where it has been possible to obtain a somewhat more direct measure of the relative magnitude of that gap, the "gap variable" has given the same statistical interaction results with extension activities and farmers' education as the variables that measure research.

The fact that everywhere researchers have found a complementary relationship between research and extension work in effects on adoption of new practices and on increases in agricultural productivity was predictable enough. If we accept the evidence that farmers are usually quite shrewd in their economic behavior, an "extension system" must depend on an effective research back-up if there is to be anything to extend.

The observed complementarity in effects on adoption of new practices and on production between research activity and farmers' schooling supports the theoretical hypothesis. Farmers' schooling pays off in accelerated improvements where there are relevant advances in scientific knowledge (given the other necessary supportive conditions); it does not pay off where there is no such advance. It has become clear also that if research is to bring a wide diffusion of agricultural progress, it must itself be localized to particular types of situations. We are coming to recognize that the "Green Revolution" was not much of a revolution; many advances had been made before, and the results from the first phase of the Green Revolution were limited to particular physiographic and soil conditions.

The stimulus of schooling to more rapid adoption of suitable innovations and to improvement in productivity is not a statistical fiction arising solely from the positive association between schooling and size of farm. On the other hand, generally new practices appear first on larger farms. In some cases they have not been suited to the small holdings.

The larger farmers have more incentive to invest time and effort (and sometimes cash) in the acquisition of information, they have somewhat greater cushioning against risk, and they can often try things out in a small way before committing themselves to a major change. Many small farmers cannot afford to take the risks, even when they are fully informed about the new developments.

(2) Inter-relationships between benefits of extension activities and of schooling are more complex. They seem to depend upon both the level of schooling over which variability is being observed and the nature of the extension activity. When we are contrasting literate with illiterate farmers, extension activities seem to be complementary with the rate of literacy across districts or villages as respects adoption of new practices. Only farmers with some basic readiness to receive, assimilate, and act upon new information are initially benefited by what most extension agents do. However, extension activity and farmers' schooling have sometimes been clearly substitutive when the schooling variable distinguishes among levels of schooling — as proportions of farmers with secondary schooling (or even, in the United States, with at least some higher education). These findings of substitution effects (where there are any clear interaction terms) are the more notable in view of the fact that there has been a well-known tendency of extension workers to deal with the relatively educated and economically successful farmers.

(3) There is evidence of spill-over effects from literate to illiterate and from more to less educated farmers within each farming community. The better educated lead in the adoption of new practices, but the lead may be short, and the advantage of the better educated farmer over his neighbor can be quickly narrowed. This is one of the reasons why naive analyses of relationships between schooling and indicators of success in farming often come out with only very weak positive correlations. What

happens is a sort of informal emergence of the lead farmer as an extension agent vis-a-vis his neighbor. Attempts to bring this sort of thing about through farmer-training centers, "animateurs" and so on have a mixed history, and I suggest three main reasons for this mixed experience. First, both content and pedagogy are inappropriate for most farmers, whatever the readiness (including schooling) of the few selected trainees to assimilate and decode pertinent information.

Second, the individuals chosen for such training may not be in a position to control what happens on "their" farms, or to demonstrate the value of what they have learned. Even where they can do so, they may not have the position in the local information and influence network that would give their ideas a wide or receptive audience. As Hägerstrand's work has shown, the transmission of information and receptivity to it depends on the relationship between source and recipients. Again, note should be taken of women; in some of the LDC's most of the responsibility for agricultural production is carried by women, and in many, women are active participants in farm decisions. (This is the case also for many farming communities in Japan, though conditions are of course very different.) Nevertheless, women often are left out of account in programs of non-formal education for agriculture. With important decision-making responsibilities or influences in the hands of women and a communication network among these women, disregard of their key role in agriculture can seriously fault the educational programs. Virtually everywhere this must be an important concern with respect to the farm household economy and the role of women in food processing. A micro study by Peter Moock in Kenya showed that controlling for the level of schooling the women were more efficient farm managers than the men, and Bruce Harker's findings for India illustrate the importance of women in agriculture and of extending educational services to them in at least some

parts of that country.[50]

Third, the sorts of things that can be learned in a farmer training center during a short time are not what I would call "people-changing." Information may be transmitted, but there can be relatively little formation of new skills or competencies. In consequence, beneficial effects are narrowly limited and quickly exhausted.[51] This third point undoubtedly is related to the criticisms frequently made of extension agents: they "do too little about bringing economic knowledge to the farmer, concentrating too much on particular inputs or relatively simple alterations in production techniques." Unfortunately, the economic or "farm management" training that we may wish extension agents to purvey is not so easy to transmit, even when the agent himself has the competence he is supposed to extend. Only when farmers are well prepared to receive it, with a foundation in adequate schooling and experience of decision-making in the management of their farms, can further efforts to supplement decision-making capabilities have much promise. Neither extension work nor other out-of-school attempts at "basic education" for farmers can provide that foundation.

Maximizing the efficiency of information systems

Effective transmission of information to farmers and assurance that it will be assimilated and used will be realized only when the interplay of many influences is taken into account. We must look at agricultural development first of all from the perspective of agriculture, rather than by taking a piecemeal look at one sort of education and information transmission, then another — even when we casually take account of the interactions just discussed. Starting from the perspective of agriculture, it is more likely, furthermore, that adequate attention will be given to what is known about

the operation of information fields. Only when we think in this way are we likely to see the less obvious but often the most important links in the diffusion of information and ideas.

The most ignored agents in the transmission of ideas and information to farmers are the businessmen who sell to and buy from them. In no LDC to my knowledge have cooperative managers filled this role. The disregard of traders arises in part from mistrust, and unquestionably they do sometimes extend misinformation along with the facts. But farmers are not perennial fools — in the face of either tradesmen or officials. Cooperatives can be useful in organizing marketing more efficiently, and we need to continue trying to find ways to make them work more satisfactorily. But this means that more attention must be paid to preparing cooperative managers for greater communication roles.

The training of extension agents also comes into a different perspective when set in the framework of the theory of "information fields." One needs to appreciate the need not only to increase the competence of extension agents in substantive applications of knowledge, but also to bring them into closer relationships with farmers. Thus IRRI helped to prepare agents for the successful diffusion of new high-yielding rice varieties; this program (which was itself only part of a wider effort) had two main components.[52] One of these was changing the change agent through bringing extension workers in as participants in the rice production process all the way from the land preparation to harvesting. The other was the use of applied research plots in farmers' fields. While this particular experiment cannot be unthinkingly generalized — indeed, the prestige of the IRRI and the very direct and specific purpose of the program were especially favorable circumstances — it does point to the importance of establishing two-way communications.

Finally, we come to the problem of educating the public generally and educating future leaders in particular in the problems of the rural economy and more specifically of agriculture. Above all, it is necessary to ensure that those who make the decisions that most change the lives of farmers should be men who know what the lives of farmers are like and who know the problems they face on the ground.

V. The Rural Non-Farm Economy

The "invisible" sector of economic activity, rural non-farm enterprises, occupies a substantial place in the employment and income of rural populations in most of the LDC's, and upon the further development of that sector depends much of the future of rural and urban populations alike. These activities are "invisible" only because so rarely do the urban educated elites or the central planners make any effort to look at them. There have been exceptions, of course — most notably at the political level in the drive to develop cottage industries in India (stimulated many years ago by Mahatma Gandhi).[53] China also provides a more recent, striking example. Yet in most of the world until recently the contribution of small enterprises has been neglected at best, and more often this sector actually has been penalized by national policy-makers. Those economists who have emphasized the importance of the ordinary, small enterpriser (rural or urban) for development have usually been ignored. Almost everywhere they are regarded with outright suspicion by planners. Even the work of men like Archibald Calloway, whose empirical investigations and analysis were well rooted in West Africa, has received only passing attention from policy-makers. Despite the recent emergence of a more active interest in "rural economic development", the new World Bank sector paper on that subject gives non-farm economic activity short shrift; no mention is made of it in the summary of

the report, and it gets just two brief pages in the body of the report. Nevertheless, this sector is drawing increasing attention not only among researchers such as Calloway and Kenneth King, but elsewhere as well. It occupies a significant place among the case studies edited by Ahmed and Coombs and in their associated Attacking Rural Poverty. Those of us who have paid a bit more attention to economic history may bemoan the previous unawareness (as we have done), but we must welcome this new interest, whatever its origin.

This is not the place in which to document the history of small-scale enterprises in economic development, nor can space be taken to show in what respects the evidence of history may be applicable to the present and future. Setting all such discussion aside, we have increasing evidence today of the aggregate importance of small rural non-farm enterprises in many LDC's, ranging widely across politico-economic systems and ideologies. No census documentation should be needed to demonstrate this fact for Malaysia, for example, or indeed for most countries in which there have been large Chinese settlements. Enyinna Chuta and Carl Liedholm have this to say of Sierra Leone:[54] "The results of the first phase of the small scale industry study reveal that small scale industry in rural Sierra Leone has been substantially underestimated by previous government surveys." They found the composition of activities to vary substantially by location, but the most common were tailoring, carpentry, gara dyeing and baking. The Kenya Survey of non-agricultural rural enterprise (1969) found that incomes earned in those activities averaged about 16 per cent above incomes of wage laborers on small farms and "markedly above" the cash incomes received by farmers tilling small plots. With reference to the nature and scope of these activities, the ILO had this to say:[55]

> The survey of rural non-agricultural activities, as well as fragmentary data from urban areas, contradicts the popular view that the informal sector is made up of what are considered to be the marginally productive activities of such people as petty traders, hawkers and shoeshine boys. In rural areas, 30 per cent of those covered by the survey were in manufacturing and repair activities, and the three largest groups were in tailoring, sawmilling and posho mills ... similar patterns prevail in the urban informal sector.

Examples from other African countries could easily be added, even if with less precise accounting, as could examples from Latin America.

The undercounting of non-farm activities has sometimes been aggravated by the tendency to disregard non-farm activities of members of peasant families. This was brought out clearly in the assessment of the Puebla project in Mexico by Reed Hertford, who was seeking for an explanation of why such a small fraction of small farmers had adopted the new practices that had been recommended to them (and developed in localized applied research). Most of the usual explanations simply did not apply in this case, but Hertford found[56] that "incomes derived from crops — and from agriculture generally — appear to be a much smaller proportion of total income of small farmers than would have been expected on the basis of available literature." In the case of Cajamarca, the proportion of farm-family income from agriculture (including work on other farms) was only 38 per cent for the small farms (under 3.5 hectares); that proportion rose to a level of 67-84 per cent for the larger farms. Data on Puebla (where farm-size classification was not available) indicated that total crop production accounted for just over a third of all 1970 income of farm families. (Unfortunately, details about off-farm activities in these cases were lacking.) It must be obvious that to talk about rural development without giving careful attention to contributions of the rural non-farm sector, as it is and in its future potentials, is to adopt a myopic view of what rural people do and of their future prospects.

Symbiotic relationships in the developing rural non-farm economy

Rural non-farm and off-farm employment always is symbiotic with agriculture, directly or indirectly. The importance of these interdependencies in the totality of non-farm enterprise will of course depend on the degree of rurality of the location. It will depend also on the characteristics of the local agriculture, its organization and technology. Some of the agriculture-serving activities may be taken on by farmers themselves, or they may be entirely separate operations. Education for such work is in either case education fostering development of both agricultural and non-agricultural facets of economic development. However, the competencies required will differ somewhat according to whether an activity or set of activities is included within the farm enterprise or separately, and if the latter, according to its organization.

We can categorize agriculture-serving activities in five groups: (1) primarily education and information transmission directly to and for farmers, (2) marketing services that provide inputs to farmers and that dispose of agricultural outputs. (3) provision of credit, (4) the manufacture and repair of equipment and of tools used by farmers, and (5) transportation services. The first of these is exemplified most obviously by extension personnel, usually supported and controlled by governmental agencies, and we need say no more about it. Marketing services might just as well have been designated "trade" except that this term has unfavorable connotations for some people; moreover, the fact that the manager of a marketing cooperative is a "trader" is rarely recognized. Evidently, education for management of an agricultural marketing cooperative is likely to require more formal training, with higher levels of schooling, than the education needed by small traders. There are many different ways in which credit may be extended

to farmers, whether jointly with provision of other services or not. Some of the institutional adaptations and innovations in this field have been discussed in the World Bank's special report on agricultural credit, and others appear in any good assessment of agricultural projects or programs. Again, the education that will best serve those carrying out this function varies with the ways in which it is organized, but increasingly the formal education provided in schools is critical, along with knowledge of local agricultural affairs.

The service that is most often mentioned in connection with rural non-farm enterprise undoubtedly is the production and repair of farm equipment. This is also the service that is most often performed by hired workers on large farms as an alternative to specialized shops, and the demand for such services (wherever they are performed) changes in step with agricultural technology. It is at intermediate levels in the scale of investments in farming equipment that we find most scope for local enterprise in the manufacture of implements. And it is at some point in the intermediate ranges of technology that both the variety and the study of ways in which craftsmen acquire or may be trained to perform these services in the rural community becomes both most interesting and most important. There have, of course, been many debates on this subject, though usually the debates have been decidedly ill-informed. However, there has been very little discussion of education for entrepreneurial responsibilities in the manufacture of farm tools and equipment. The discussions seem always to be directed to training for manual skills — how much of this in schools, in non-formal or in informal settings — and education to what standards of workmanship and manual ingenuity. How much of the training is for the 'jack-of-all-trades' on or off the farm but serving farmers, and how far that is the appropriate goal, is only beginning to receive attention. There is the further crucial related question

of how much of any deliberate training should be for specific jobs, how much should be more general in content. Walter Elkan was interested in just such lower-level general skills in his recommendations for "topping off" training in Kenya's Youth Centres:[57]

> It is not easy to demonstrate that a widespread ability to use a hammer and nails efficiently will have specific effects on the growth of rural incomes but it must be intuitively obvious that not to be able to do so, and not to be able to read and understand farmers' magazines or printed manuals for a new piece of equipment, is bound to hold back progress. It is, however, quite possible that the need for institutional arrangements to impart these skills will decline. In the advanced industrial countries these skills are normally passed on by parents to their children, but first there has to be a generation of parents who have acquired them.

With the spread of general manual skills, which are ancillary to farming but also to general living, the levels of skills provided in independent, specialist repair shops will undoubtedly rise. Whether this will alter the relative importance of manual training in and out of schools, non-formal and informal, is another question. After all, the role of schools in providing manual skills will depend not only on the demand for such skills but also upon how easily they can be acquired in other, less costly, ways.

The interdependence between agricultural progress and the development of agriculture-serving activities in the rural areas is only one side of the story. Beyond that, agricultural progress means increased markets for the sale of consumer goods to farm families. At the most rural and local level, this is where the tailors (and sometimes the bakers) come in. But the supplying of farm markets, with either consumer goods or agricultural inputs, has feed-back effects into rural hub-towns and into major urban centers as "modernization" proceeds and as buying power grows. There are symbiotic relations of complex sorts between farm villages, rural hub towns, and urban centers, reflected not only in the location of production activities but also in the movements of people for training and work.

Kenneth King's study of the village of Githiga along with his other work in Kenya illuminates this spatial interaction at a stage at which young people are becoming more realistic about the shortage of "modern jobs". I take a few points from his summary on Githiga:[58]

(a) The origins of most village skills are outside the village. Most of the older generation of village fundis were drawn into wage labor on white plantations and large farms, or in the Indian intermediate firms. Those in the latter category acquired their skills in the main towns. Older fundi who have retired from wage labor to self-employment in their villages provide one source of skill for the younger generation. Nevertheless, many of the younger skilled men in the village had acquired their competence elsewhere. This was true of garage mechanics until very recently. Other new skills — radio repair, using knitting machines, making metal window frames — have just recently come into the village. Githiga, in other words, is clearly developing, as is much of the Kikuyu area. New skills are moving in, and once located, the skilled craftsmen quickly acquire apprentices. Conditions for rural self-employment are much more favorable today than they were when the older generation of skilled workers were young.

(b) There are complex communication networks between village and urban people (complex and sometimes quite dense "information fields"). Village migrants to the city know where their village friends are working, and they may go to the city either to acquire skills or to find opportunities to use skills that they have already acquired. They go also in off-seasons or for limited periods of wage work and then return to the village. Growth of learning or training opportunities in a particular village or in a hub-town may produce skilled men in greater numbers than the local community can use, and these men spread out to adjacent towns as well as into the main urban centers to exercise their skills in informal production. There is no

urban-rural dichotomy in this respect — in Kenya or in many other LDC's. Indeed, anyone who walks around the peri-urban peripheries in India with his eyes open can see this immediately.

(c) On King's third point, concerning the unskilled origins of informal-sector village skills, I prefer to make a direct quotation:[59]

> ... An important point about the origins of many informal sector skilled people is their time spent in casual and unskilled work — as diggers, turnboys for taxis or lorries, milkers, domestic servants, tea and coffee pickers. This work is critical because of its impact upon the motivation for acquiring skills. Some occupations are widespread amongst the children of low income families, and the low wages and conditions associated with them adjust them to acquiring a skill under similarly rigorous conditions. What therefore may seem admirable about the low costs of transferring skills to young people in the village must to some extent be seen as conditioned by the previous experience of the trainees. It makes it difficult then to draw up a typology of Kenyan village skill acquisition as a system of trade profiles complete in themselves. One reason the skills are transferred so cheaply is that the skilled are in fact very close to the unskilled. The poverty of the process has constantly to be borne in mind since a good deal of what seems distinctive and significant about Kenya's 'system' — its improvisation, hand made tools, low costs and speed of skill reproduction — is actually determined by lack of choice. We have therefore to be rather careful about isolating the skill acquisition stage of many of these young people, and removing it out of the wider context of income and opportunity in the village.

Another way of putting this last main point is simply to reiterate that for Kenya as elsewhere, a significant part of the educational process is development itself. Given new opportunities, however circumscribed, men will find ways to realize those opportunities in action. And given a general environment that allows scope for independent action, men will use their ingenuity to create new opportunities. Each step may seem small, but together many small steps mean sustained development, reaching into the mass of the rural and urban poor alike.

Interdependencies between agricultural and non-agricultural activities, and between rural and urban locations, in skill development and in the development of informal-sector production are matched in Kenya by interdependencies between the formal and informal sectors of the economy. **66**

Again, this is not unique to Kenya. Symbiotic relationships are sometimes induced by government action, as in the requirement that Sears in Mexico purchase goods locally, with the resulting growth of indigenous suppliers who were helped with credit and with training and consultant services by the assured buyer of their products. (Similar relationships have been endemic in Japan.) Direct attempts to force contracting out often do not work; what is important is that there be conditions that induce such behavior. King again documents such relationships at a much more modest level for Kenya. A further quotation from his work may drive this point home:[60]

> ... it is common to read proposals for how the informal sector may be stimulated to expand by encouraging the formal sector to subcontract some work towards it. But what is less widely understood is that the informal sector is already intimately associated with formal employment. (a) A very great deal of the business of urban informal mechanics comes from people in formal jobs who expect to get the same repair or replacement done at half the price they would pay in the large-scale motor firm or official agent. This not only takes advantage of the cheaper labour and lack of overheads, but also of the informal sector's rather unconventional access to genuine spare parts. (b) People in salaried positions also use the actual employees of the large-scale motor firms to do work informally, out of hours.

Dualisms and continua in skills and in scale

The interconnections just discussed are indicative at the very least of the potential for development of continua in skills and in scale of enterprise — continua that would provide greater opportunities for smaller men to grow both in refinement of skills and in scope of entrepreneurial activity. However, there is little in these relationships to guarantee that such continua will in fact emerge. Perhaps it is too much in any circumstances to expect to find long unbroken ladders that can be ascended within one man's lifetime — highly exceptional individuals aside. Where a man starts in level of formal schooling or in technical training substantially affects his lifetime potential in any society, whether an LDC or an industrialized nation. Nevertheless, there is nothing immutable about technological dualism, and

approximations to such a polarization of economic activity signal non-development rather than development for most of the population.

In Attacking Rural Poverty, Coombs and Ahmed classified schemes for the furtherance of rural non-farm production and for formation of needed human resources in three broad types: (a) technical skill training for older adolescents and young adults to prepare them for initial employment (Thailand's Mobile Trade Training Schools), (b) technical upgrading of artisans and craftsmen (the Nigerian VIC program, with part-time training starting at the end of the working day), and (c) more comprehensive schemes for promoting small industry. The first two categories tap into skill hierarchies at the lowest levels, whether to provide the most modest skills or to improve them. The third category, which entails attempts directly to create new small enterprises through an entire package of services, is much more complex. It has a history of many frustrations.[61]

I do not question the importance of encouraging small industry. But neither do I see promise of success in strategies of direct government action. Few bureaucrats or central planners, or counsellors to them, have the analytical tools or the expertise to carry this out even in the very first step — the identification of potential markets and the sorts of production to encourage, together with the skills to be subsidized. Gilpin and Grabe regarded reliance "on 'intuitive' planning based on uninformed demand (leading to overinvestment in corn and rice mills)" as the greatest weakness in Nigerian efforts to encourage small-scale industry.[62] They went on to complain that "There is no machinery for identifying underinvestments in fields that have not caught the imagination of would-be entrepreneurs or young skilled workers." Perhaps this is a comment on the perceptiveness and shrewdness of ordinary people, which cannot be displaced by any sort of planner's methods or models. In any case, identification of the potential

markets is only the beginning of the problems of direct stimulation of small enterprise, whether in an "integrated" approach to rural development or otherwise. Crucial are problems in training for entrepreneurship (not merely "skills") and the qualifications — or lack thereof — of the trainers. The frustrations encountered in the Indian attempts to develop a cadre of industrial extension workers, posted to community development blocks, illustrate difficulties that must arise again and again. Above all, that experience illustrates the extreme difficulties of staffing for such services, and the related problem of role definition and status within a bureaucratic structure. The technical counseling services of SSIDO in established firms of intermediate scale appear to have been much more successful, which should hardly surprise anyone. Among the "lessons of India's experience" the following should be underlined:[63] (a) Training and extension services for small-scale industry obviously can be effective only in proportion to the opportunities for profitable investment available to such industry, (b) Adequate staffing is a key problem, (c) The tendency toward an excessive dispersal of activities must be resisted, (d) Extension and training should not be allowed to degenerate into a routine government service. The first of these generalizations is directly parallel to observations concerning the complementarity between research and extension services in their effects on productivity in agriculture and the adoption of new processes, despite marked differences between farming and other activities and markets. This comparison may be carried further, to consider the role of research oriented to the operations of small business. Pursuing these possibilities, the ILO has recommended technical aid and research "to develop and encourage the production of producer goods used in the informal sector itself to supply blacksmiths, carpenters, clothing makers, vehicle repair and maintenance shops and the construction trades."[64] It is not clear,

however, how this idea is to be implemented. It is evident that advisory services for small enterprisers will be most fruitful when directed to helping those that have the greatest potentials to grow to intermediate scale. What factors determine that potential is then a crucial question for further economic development in both rural and urban communities.

Education, communication and innovation in the non-farm enterprise

It has been observed repeatedly that extension and advisory services have been more successful in transmitting information and skills of a technical sort than in the transmission of economic knowledge and of managerial skills. This brings us back once more to the importance of schooling as a foundation for the development of skill in economic decision-making. But it brings us back also to the problem of how to acquire or transmit new social and supervisory skills. Successful entrepreneurship beyond the level of what is required by the smallest operations, whether in processing or services or trade, makes heavy demands on the capabilities of the enterpriser — and of anyone who would guide or instruct him.

The cultural setting and traditional modes of personal interaction cannot be ignored by an entrepreneur or manager seeking to order activities systematically and to control quality in an establishment that exceeds some modest size. Both the opportunities for informal learning at work among his employees and the productivity of the enterprise will depend, among other things, on the ability of the man in charge to motivate his employees and to enlist their cooperation with him and with each other. This requires adaptation on both sides. It is a problem to which I directed my attention in the essay "From Guilds to Infant Training Industries" from which I quoted earlier in this paper. I drew these conclusions:[65]

> But even when a local supervisor knows his workers, there are relatively few pre-industrial societies in which he will have a model for behaving as a supervisor of disciplined team endeavors. ... He is equally unlikely to know how to teach these skills in a setting that bears little resemblance to native apprenticeship. The local manager may be more constrained by familiar role patterns that would be less binding on a foreigner, patterns that both condition the operation of the authority structure within the enterprise and delay the transition from nepotistic to rationalistic selective processes in promotion. I suspect that it is not merely, and often not even primarily, the difficulty of bringing large sums of capital together that makes most native private enterprises in less developed countries comparatively small. It is also that smaller units facilitate the transition from one world into quite another.

If I were rewriting this statement in the present context, I would change only inessential points. In fact I did suggest that this picture should not be overdrawn:

> There is all too great a tendency toward ethnocentrism of two opposite kinds. One of these is to assume that the only kind of management that can be viable and efficient must be a close imitation of the structures of relationships of Western societies or even more narrowly of a particular Western stereotype; this is the economist's and often the sociologist's ethnocentrism, which takes as its model one or another favorite case from one of the economically most undeveloped societies.

During the decade since those words were written, we have seen some decided shifts away from both of these biased simplifications. Despite the much decried (and often exaggerated?) hold of technological dualism, there are many examples of viable and vigorous home-grown enterprises in LDC's. We have witnessed new socio-political experiments in the organization of productive activities on both a national and a local scale. We have cumulative evidence that ordinary men in all societies are responsive to economic motivations once the options really open to them are identified. The spread of schooling has unquestionably played an important part in these changes in two ways that often are not credited to schooling. First, schooling has been an integral part of the process of reorientation toward large-scale and bureaucratic types of economic organization. Carried too far, in

conjunction with the swelling of bureaucracies, effects can of course become in part perverse. But ultimately the spread of schooling will correct this, even if at a high cost. When numbers of graduates outrun job openings in the formal sector consistently and dramatically over time, the very spread of schooling will push people with higher levels of basic training (say, to start with, seven years) into a search for other sorts of employment, including self-employment. This can give a new thrust to the informal sector of the economy. Paradoxically, as King has pointed out,[66] the very lack of control of expansion of schools in Kenya (including proliferation of independent "harambee" schools) produced so large a flood of school leavers as to bring more quickly than in Tanzania a realistic recognition of limitations on "modern job" options. The newly-schooled majorities are newly motivated to search for and create opportunities.

So far as I am aware, there has been no systematic study of <u>how</u> schooling, and other sorts of education (or training), affect the behavior of independent enterprisers. The one exception, a dissertation just reaching completion at the University of Chicago, refers to independent businessmen in Japan. Most of these firms employ less than thirty workers,[67] with a concentration around half that figure. From T. K. Koh's rich tapestry of interrelationships, I confine comments to a few points.

Looking at the entire sample, regardless of industry, there were unambiguous positive associations between how much schooling a man had, his use of formal channels of communication, and the frequency with which he innovated in his business. Types of innovations distinguished were: (a) changes in processing techniques, (b) changes in marketing practices (on either the buying or selling side), and (c) changes in organization or in control systems. Each type of innovative behavior was associated with schooling in a different way. Only the most schooled showed much

organizational innovation, whatever the industry. Changes in processing techniques were less related to enterprisers' schooling. It was the craftsmen, as we should expect, who most often reported out-of-school training and who had the lowest average initial schooling — though most even of the least schooled had eight or nine years. Moreover, the craftsmen made extensive use of formal sources of information relevant to their trades. Among the craftsmen, schooling beyond the standard compulsory years had little effect on communications or on innovation. By contrast, among manufacturers schooling had quite complex effects. At the top, going to university greatly increased the intensity of informal sources of information and innovative ideas: the school-clique information fields are extremely important among these men. Attending a technical or commercial upper-secondary school favored both greater use of formal communication and increased innovative activity — in processing techniques among manufacturers and in marketing practices among wholesalers or retailers.

Obviously these results cannot be generalized to the LDC's, but they are suggestive. These findings are consistent with the more extensive findings in research on agriculture even though the details are very different. They are consistent with evidence from more casual assessments of efforts to foster small-scale enterprise and with the greater success in counseling on technical than on other matters. Transmission of information is seen to be effective only when the target groups are qualified to receive and interpret it for their own decision-making purposes. From observations such as these we should learn something not only about the role of schooling in and for entrepreneurship, but also about the selection of messages and the agents of their transmission in attempts to increase the capabilities and improve the performance of small enterprisers in the LDC's.

VI. Strategies for the Enlargement of Opportunities and for Their Realization

I take five truths to be self-evident: (1) The spread of formal schooling alone can never be enough to provide the human resources for sustained development. I find it difficult to believe that anyone could ever have thought that formal schooling could be enough for such a transformation. (2) A major part of what people learn — in every society — is learned outside of schools, in both "non-formal" and "informal" situations, and most of these never can be "planned." Non-formal and informal education are both crucial to and produced by the process of development. (3) Development is a very complex process, characterized by multiple interdependencies. Whether this means that development strategies must be "integrated" depends on what we mean by an "integrated approach." (4) Without innovation, both technical and institutional — including adaptive borrowing — there will be little development. Simple imitation of what is done elsewhere is not enough and often not in fact possible; economic viability in the new setting will require innovative modifications. (5) The potential for shrewd decision-making and for creative ingenuity is widespread in every population, though realization of these potentials may be blocked by restrictive institutions and the absence of necessary supportive conditions. Neither "experts" nor men in positions of power are uniquely endowed with wisdom; mainly they can facilitate the myriad of ordinary decisions, not make them. Only as ordinary people are given scope for the exercise of their ingenuity and creative powers can we expect sustained and pervasive development.

None of these points is either new or remarkable. What does seem surprising is how long it has taken many supposedly informed people to take them into account, and it is my impression (perhaps unjust) that comprehension is still remarkably dim. Some of the new watchwords could be

encouraging, nevertheless: the "discovery" of out-of-school education (point 2), the new ideology of "integrated approaches" (related to point 3), and the new prescriptions for "self-reliance," for "maximum feasible participation," and for "decentralization" (all related in one way or another to point 5).

The elusive meanings of "integrated development"

Before going further, it is necessary to say a few words about the idea of an "integrated" approach or strategy for development. Ruttan provides a terse statement:[68] "Integrated rural development can be described, perhaps not too inaccurately, as an ideology in search of a methodology or technology." But the devotees of an integrated approach appear to be saying something more specific than a simple argument for the "value of rural development ideology as an integrative framework for rural development programs." Thus, when Coombs and Ahmed distinguish four approaches[69] — extension, training, cooperative self-help, and integrated development — I assume that they mean something more specific than that each particular project must be assessed from its conception in its relationship to essential complementary conditions, resources and activities. There seems to be a "total planning" bias in their "integrated development" approach that goes beyond a modest analysis of substitutive and complementary relationships. The careful examination of relevant interdependencies (substitutive or complementary) is just good sense, however often honored in the breach. Put forward as a rule for planning, the "integrated development" approach suggests something that is much more ambitious, more costly, and more demanding in every way; even were this desirable, it is in fact impossible of attainment.

Still searching to find out what "integrated development" may

mean to planners and to those who would counsel them, I came upon Susan W. Almy's statement:[70]

> Essentially, "integration" of rural development programs implies separate administrators within, or parallel to, existing government offices or ministries. These units have the same assigned roles as the ministries of health, education, industry, etc., but deal only with rural areas and interact among themselves as a kind of shadow cabinet.

I wonder how many of those urging integrated development have this particular framework in mind. Actually Ms. Almy goes on to state astutely that "Planners and taxpayers alike wonder whether the additional bureaucracy is not more costly than it is effective." She points out that "the 1950's solution to this problem was the 'community development worker'," but that concept came into disrepute because such workers were not able to cope with the task. She attributes emergence of the current vogue for integrated rural development to a new concern about "highly visible increases in social inequalities." (Nothing is said, by the way, about whether those inequalities are simply a reflection of the fact that some people have moved ahead faster than others, or entail absolute as well as relative deterioration among the poorer populations. I do not want to take up that debated issue here. It is enough to recognize that more attention is being given than heretofore to those who have not been participating significantly in economic progress.) But "integrated development" in that case is not just a matter of integration; it is also quite specifically a distributive ideology that may or may not be consistent with strategies for overall economic growth. At this point my confusion increases, although my sympathies are much aroused.

Harry Oshima is easier for me to follow, perhaps again because he is an economist. He has this to say:[71]

> The economists usually have in mind a package of inputs (including institutions and technology) for a program of agricultural development. The non-economists think of integration as a much bigger package of programs — development of health, education, and institutions, as in the case of James Yen's rural reconstruction movement.

This statement is familiar; agricultural economists have been doing this all along. Moreover, many of them have gone further, seeing health and education as important inputs for agricultural development — other good reasons for encouraging education and improving health aside. But Oshima arrives in the end at a simple definition of integrated rural development as sustained long-term changes within rural areas:[72]

> For present purposes, we may have to be satisfied with a definition of integrated rural development as schemes with some kind of package intended to bring about sustained long-term changes in the rural areas, leaving the broader term, rural development, to refer to all kinds of programs (short-run, unpackaged, etc.) .... The goals of development will be thought of as not only the rapid growth and fair distribution of rural incomes, but also the broadening of education, health, and political opportunities.

I'm not sure whether there is a policy recipe embodied in this statement, that only packaged programs under one authority can lead to sustained rural development. If Oshima means only that interdependencies must be taken into account in development strategies, then we come back to Ruttan's definition: "integrated development" is an ideology. In this case it is an ideology of sustained, widely diffused rural progress. To that goal I subscribe, even though, as Ruttan said, it may still be in search of a methodology.

The interdependencies between education and development

The papers by Colclough and Hallak and by King and Postlethwait relieve me of the need to elaborate on either "basic education" or curricula in rural primary schools. At best, "basic education" outside of schools is a poor substitute for primary schooling. This is not to say that problems of illiterate and semi-literate adults, or of over-age primary-school youth, should be neglected. But out-of-school "basic" education must be regarded mainly as a temporary palliative, in the face of continuing demographic pressures.

The limitations of out-of-school education are paralleled by the limitations of remaking rural primary schools into patterns that differ substantially from urban schools.[73] I was especially glad to see the documentation of the fact that rural children do indeed work from an early age, that they know more about farm life from direct observations than they would ever learn in the artificial environment of school gardens (whatever those may produce), and that it is therefore nonsense to talk about timing education to keep children in school to a "working age" of 16 or 17, or to ask the school to make them better acquainted with sound farming practices.[74] Along these lines, it is the urban schools that need to be changed. And surely urban quite as much as rural children could benefit from the acquisition of general manual skills.

While claiming no special competence in pedagogy, I should think that real education (in contrast to drill for academic examinations) would relate lessons to what goes on outside of schools. Unfortunately, few teachers in the primary schools of the LDC's have trained for such teaching, and few have been encouraged to develop imagination in themselves or others. To press for distinctively rural-oriented curricula is to assure that rural schooling will be second-rate; it is to accept defeat from the start in the effort to extend development through the rural population. C.A. Anderson has often made this point:[75]

> Second-rate schooling for rural youth, if it has any direct effect, discourages the very transformations of rural life that would enlarge opportunities in the villages and market towns, a transformation that would draw informed youth into that growth instead of locking them into a stagnant agriculture by ignorance.

Ultimately, the effects of second-rate primary schooling, or of reliance on out-of-school basic education as a substitute, can be perverse with respect to migration patterns, discouraging those who are most successful from staying in the rural areas, or from returning to the village after a stint in the city.

For such people, the attractiveness of the village community depends in part on how well those with whom they would associate are schooled, and on the schooling available for their children. Rural-urban migration and rural-urban communications are affected in both direction and intensity by the educational environment of the rural area, along with the extent (or lack) of other rural amenities. The internal demands of the school system for the minority who continue further in it aside, it simply is not true that "incompatibility between what schools taught and what people needed to learn"[76] is greatest in rural areas — unless we are saying that rural schools do a poorer job of the same things done in urban schools.

The predominant "formalism" of the schools in most LDC's, their close linkages to the bureaucracy both in style and in the destination of graduates, and an unthinking or prideful adoption of standards from the metropole for the higher levels undoubtedly have had perverse effects. One of the results has been to polarize skill standards and attainments. This polarization of skills is linked also to labor market policies that contribute to the wide gaps between most of the urban "modern sector" enterprises and the small informal-sector undertakings, in city and country alike. Ramifications are many, but a common result is to impede the gradual upgrading of many sorts of skills and the transformation of tiny enterprises into viable undertakings of intermediate size. King has documented some aspects of this problem for Kenya, along with its partial circumvention in some cases. Particularly striking is the contrast between skills acquired in the African open-apprentice system or in working for Indian contractors and the standards set in official support for a very high-level post-secondary British apprenticeship system. Moreover, he found there was virtually no feed-back to the villages from the training provided in the Kabete trade school. Among rural youth who were seven or eight years out

of primary school, it was those who had not entered secondary school who had become self-employed or small enterprisers. In the ways schools record competence, these were not the most competent boys, but were they less "intelligent" or less shrewd and energetic in practical affairs? Nor is it accidental that enterprisers of modest scale have typically a preference for men with informal on-the-job training rather than with technical secondary education. The higher skill standards are diseconomic in terms of wage expectations and they seem not to favor attitudes of adaptability in job assignments. Only with widespread training to modest skill standards can we expect to develop among many in the population anything like the ordinary Jack-of-all-trades, or the "undifferentiated American" of an earlier era.[77] Yet it is through just such people and such activities that development is diffused through a society.

Rigid and unrealistic standards (as defined by bureaucratic certification in a formalized system) impede also the development of a viable agricultural policy. The effects are not only direct, on the diffusion of handy-man skills on and off the farm. Polarization in levels of training is often an obstruction to the development of efficient communication networks. There is the further fact that for the cost of training one high-level person it would be possible to help many at a very modest level. Thus Ruttan emphasized[78] that a program capable of fostering rural development needs to "utilize relatively low quality and inexperienced human resource endowments" with "extensive rather than intensive use of high-cost human capital at both the planning and implementation stages."[79] Elaborating upon this point, Ruttan specifies: "Few societies have yet been able to design systems that would enable them to insist that highly educated people provide services to people with sharply lower levels of education." Furthermore, as both Ruttan and Wharton have pointed out, poor people are reluctant to seek services from men who differ greatly in class and income. The ILO volume.

Towards Full Employment: A Programme for Colombia, includes comments about this problem in application to medical care, a point that has been stressed repeatedly by C.A. Anderson. Thus, with respect to Colombia, it is noted[80] that there is extreme inequality in medical care for pregnancy and at child birth, but "no schemes to give minimal medical training to indigenous (traditional) midwives, nor, for that matter, of any attempts to incorporate traditional healers (teguas) at least partly into the modern health care system." The problem of distorted standards in Kenya is discussed in some detail by the ILO employment study for that country also.[81]

In part, the observations just cited constitute an argument for introducing new kinds of education and training, whether in schools or in one or another non-formal program. (I will come back to this later in connection with the training of local administrators as part of a policy of decentralization in decision-making and control.) These observations are related also to the problem of preventing the formalization of non-formal undertakings that come to be regarded, and in fact used, as substitutes for the regular formal system in gaining access to the formal sector of employment. The bureaucratic preoccupation with certification poses a paradox for planners who say that non-formal education is important, but then go on to say that since it is important it should be made official. This problem is recognized by Coombs in his New Paths to Learning,[82] but he doesn't seem to draw what I would regard as the obvious inference. Instead he stresses the alleged "political weakness of non-formal education," which is indeed serious enough where official policies are stacked against non-formal, non-official endeavors. The tendency of officially-sponsored non-formal systems to take on features of the formal system has been widely documented. An illustration is provided by Kipkorir in his assessment of Youth Centers and Village Polytechnics (VP) in Kenya:[83]

> There is also an increasing tendency for the non-formal programs, particularly in response to parental expectations, to take on the features of formal institutions in content, method, and goal. The overall socio-economic structure and the system of incentives reinforce this tendency. Thus, the youth center tends to become a substitute primary school and the VC an ill-equipped vocational school.

This problem afflicts the non-official harambee schools as well. It probably is an unavoidable phase of educational development, but it is aggravated by policies not only in education but also in bureaucratic hiring and promotion and in labor market policies more generally.

There is, will be, and should be some governmental planning and sponsorship of out-of-school learning and training. But there are also great dangers in attempting central planning of non-formal education. Is "coordination in an overall plan" likely to avoid or to aggravate the certification syndrome? Does it distort non-formal programs and even discourage the emergence of informal "non-formal" educational endeavors? If so, will "relevance" in training diminish? Who is best qualified to decide how to make non-formal programs for the less formal economic sectors more relevant? There is always the risk of the proliferation of a new bureaucracy. New agencies may absorb some of the "surplus" graduates of universities and secondary schools, thus concealing for a time some of the "educated unemployment." Such a policy is hardly the way to induce realistic expectations or to elicit more productive activity. Policies that encourage the emergence of relatively spontaneous and cheap programs for education and training, giving them indirect support, may be better strategy than setting up whole new categories in ministerial budgets.

Four years ago, in a paper for the IIEP, Anderson emphasized the importance of the more spontaneously generated non-formal (including informal) education. He also linked his remarks on non-formal education to the question of alleged divorce of schools from reality:[84]

> ... the societal "needs" writers refer to in justifying the reform or expansion of an educational system are in large part actually the product of ongoing development-fostering activities. And diverse non-formal educational programs, which in large part may be unenumerated in the given society, make up a major part of those activities and often also a response to the activities that are producing development ....
>
> One conclusion from this set of comments is that one should be wary of stating that schools are "divorced from reality" in this or that society. First, schools are in large part designed to be separated from everyday life precisely in order that they may function better. Second, it often is the government or public policy (not the schools) that has become detached from the ongoing life of the society. Particularly does non-formal education work its way into a state of integration with the important ongoing activities of the society without appreciable aid from official agencies.

I do wonder just what sort of thing Coombs could have had in mind when he specified, in italics, that one of the priorities for policy was that "informal education must be strengthened"[85] — not merely non-formal, in this case, but informal. I would be the last person to underestimate the importance of informal education, having argued this for many years. But I wonder just what methods Coombs has in mind as the way or ways of implementing his recommendation. Informal education, by its very nature, will ever elude a direct approach. Much more subtle, indirect strategies are needed.

The shape and pace of development; continua versus polarities

Only as both production activities and skills come to constitute more of a continuum, breaking down the polarities of both education and production organization, can we expect sustained growth and the participation of the population at large in that growth. And only under such conditions can we realistically expect improvements in the distribution of opportunities and benefits. In a long-term view, viable policies to encourage rural development will be policies to encourage development generally, urban as well as rural. But the development of agriculture is at the heart of rural development; progress in agriculture both depends upon and contributes to increased

production and employment in non-agricultural activities. The modernization of agriculture depends upon and will increasingly demand servicing and the provision of inputs from other sectors. And unless governments squeeze the farmer by excessive tax burdens and distorted pricing (which will also restrain agricultural production), rising productivity in farming will mean rising markets for consumer products of kinds that are most easily produced domestically by enterprises that are sometimes labeled "informal sector" or that become, in this language, semi-formal-sector undertakings. In the wide diffusion of economic development and its continuous regeneration open economic incentives and an increasing density of communication networks go hand in hand. Policies designed to encourage such a spread of development will take account of forces that encourage or inhibit the development of activities that generate a continuum of opportunities for advancement and the rapid realization of such opportunities across a society.

Among the many questions raised by these considerations, three are of especially immediate policy relevance: (i) Do pricing, marketing and taxing policies of the government encourage or discourage increased production in agriculture? (ii) Is it sound strategy to shift emphasis to the smallest and poorest farmers, as the World Bank urges in its new Rural Development sectoral policy paper? (iii) What will be the most effective spatial pattern in location of infrastructure investments, both physical and human? The first of those, which is of basic importance, is discussed in the next section. I begin here with (ii) and then (iii).

Before, in any particular case, we can begin to talk about 'which farmers' should be the target group for agricultural development policies (or even whether this is a meaningful question), it is obviously necessary to identify the starting point. Existing patterns in the organization of agricultural activities vary greatly from one country, or part of a country, to

another. Looking at just one important dimension, we may oversimplify by distinguishing a situation in which there is polarization of the farming population, with a few large landholders and many tiny peasant holdings or share croppers, from a situation in which no such sharp dichotomy exists. In the former, polarized, case, land reform may well be the first step. Unfortunately, to be successful this will require associated institutional changes that commonly have been neglected in the drama of simple popular drives to redistribute land. But even where there is relative homogeneity among farmers (or where this has been brought about by land redistribution and appropriate associated reforms), there will still be variation among farmers in scale of operations and in competence. There is no doubt that the larger farmers typically have been the first to adopt new practices.

There are several reasons for the leadership of larger farmers in the adoption of innovations. They have greater functional literacy, and are better able to obtain and decode information. They are also better able to take the initial risk of trying out new practices (and to obtain the credit to do so). They may have more access to extension agents. Nevertheless, small farmers usually follow the lead of the bigger ones if the new practices or technologies are suited to their situation, and when they adopt new seeds, for example, they will often produce more per acre than is produced on larger farms.[86] If this diffusion from lead farmers to their neighbors on smaller plots proceeds smoothly, there is no real policy issue with respect to the targeting of one group of farmers versus another. No country could afford the intensive use of personnel that would be required to elicit approximately equal rates of adoption by larger and smaller farmers, by the more schooled and those with less schooling or none at all. Indeed, even in an intensive project specifically directed to the smaller farmers, those who were already most progressive manifested the highest response rates.[87]

There is still an issue, nevertheless, wherever the pattern of crops or the practices suitable to small farms differ from those that characterize larger farm enterprises. And even where cropping patterns are the same, there may have been poor provision of necessary complementary inputs or credit to serve the smaller farmers. Even where the same crops are grown on small as on larger farms, adaptations in practices may be needed for small farm production. In its new concern for small farmers, the World Bank has recently decried the bias of research toward work on commercial crops, the disregard of agriculture in the least favorable locations and of "subsistence" crops. Urged by the Bank are an emphasis on risk-reducing institutions/innovations, more research on the poor man's crops (and on subsistence crops in particular), and "better advice on simple improvements in crop husbandry and soil and fertility conservation."[88] These suggestions bring us back to the problem of communication between farmers and researchers as a two-way process, and the need for innovations in the training of transmitters of information. They bring us back to Ruttan's emphasis on utilization of low quality and inexperienced human resource endowments. Furthermore, the need for institutional as well as technical change is particularly evident when attention is directed to the smaller or smallest farmers. We may gain further insights into some of these problems by a careful reading of Ralph Cummings' report on the Puebla Project, with its emphasis on adaptive field research and the use of ideas emanating from the campesinos.[89] I do wonder, however, about the Bank's emphasis on the "common problem" of "the failure to treat the subsistence farm as a system of cultivation, requiring a comprehensive approach to on-farm technological improvement."[90] Presumably, if agricultural development programs are successful, "subsistence farms" will cease to be that, and the poorest farmers will not be so poor. Economic progress with the continuance of subsistence farming will presumably

require off-farm or non-farm activities as well as for these peasants, which might mean quite a different use of labor and other resources on the subsistence farm. Locations adjacent to hub towns may be important for the development of such part-time farming, as they are also for commercial farming.

Settlement patterns and the spatial structure of villages, towns and cities can have important effects on the development of both non-farm and agricultural enterprise. A major theme in the literature on this subject is the theory of growth nodes as well as the geography of information fields. The Mexican "integrated rural development program" (PIDER) is specific about spatial structure in its criteria for selection of areas in which to begin work. These are summarized by the World Bank:[91]

> The criteria for selecting regions for the programs are such that each must be economically depressed, with potential for expanding agriculture, mining, or industrial production; it must have at least one growth point for development; and it must have fairly high levels of unemployment or underemployment.

The difficulties of working within such criteria have been demonstrated many times, and in developed as well as less developed countries.[92] Success of this new attempt, in both agricultural and other respects, will depend upon the form and extent of linkages between the "growth point" and its hinterland, and upon whether the growth point is in fact growing. One troublesome question is why, if the growth point and its hinterland constitute a well integrated economic region, the other criteria for selection to the program are nevertheless met. On the other hand, if this is not an economically integrated region, what explains the gap between the growth point and the back country — the economic and communication "deficit trough"?

The persistence of substantial regional disparities in the rate and level of development of rural activities has been a widespread phenomenon in market and non-market economies alike — despite some partial exceptions associated primarily with the "green revolution." These locational

disparities in development gave rise to "the urban-industrial impact hypothesis," which was first stated by T.W. Schultz with reference to the United States:[93]

> (1) Economic development occurs in a specific locational matrix.... (2) These locational matrices are primarily industrial-urban in composition.... (3) The existing economic organization works best at or near the center of a particular matrix of economic development and it also works best in those parts of agriculture which are situated favorably in relation to the center.

Formulation of this hypothesis gave rise to empirical studies which have led in turn to "the development of a model of rural development in which the rural community is linked to the urban-industrial economy through a series of market relationships." Summing up, Ruttan makes this statement:[94]

> The implications of the urban-industrial impact model are not entirely congenial to the rural development ideology. Development processes in the contemporary rural community in a developing society can not be isolated from development processes in the larger society. Even the most intensive rural development efforts are unlikely to succeed if rural development is viewed as an alternative rather than a complement to urban-industrial developments. Yet, acceptance of an urban-industrial impact or "growth pole" strategy clearly implies differential rates of development among areas. This may be consistent with efficient use of development budgets. But it may also be accompanied by intensification of social and political stress. Perhaps an even more serious problem is that no one really knows how to make the growth poles grow!

Stated thus baldly, the prospects before us may look stark, and we would prefer not to believe it. Few people could "like" this theory in the sense of welcoming it, and many will dislike it further because of the emphasis in this formulation on market processes. But the underlying economics of the observations is not confined to "market economies." The theory is not a policy recommendation. Indeed, the originator of the formal theory, T.W. Schultz, has spent many years of his life on the problems of how to "transform traditional agriculture" and no one has been more insistent and persistent in seeking to influence policy in favor of poorer farmers. Nor has anyone else pressed so consistently as he has for diffusion of education among rural populations. Ruttan also has explicitly emphasized that rural

development cannot be "left to an 'invisible hand' that directs either technical or institutional change along an 'efficient path'."[95] Along with education, Ruttan emphasizes the importance of "modifications in the institutional infrastructure necessary to enable rural people to mobilize both the economic and political resources that are potentially available to them."

Paradoxically, perhaps, the most fundamental goal of rural development strategy may be both to make the theory work and to "buck it" by fostering a closer integration of rural and urban life and activities along the full rural continuum. To make the theory work is to further and implement the diffusion process and to vitalize "growth points." When I speak of "bucking" the theory, I refer to strategies that will involve remoter and more disadvantaged areas as fully and rapidly as possible; that is a daunting task, but nothing is to be gained by refusing to look at unpleasant facts or to take into account strongly opposed underlying forces. I use the term "integration" very deliberately, but this has no necessary connection with the idea of an "integrated approach" in planning methodology. The label "urban-industrial impact" may be an unfortunate one when applied to the LDC's. Indeed, we may question whether that impact can be very strong where there are marked gaps between "formal sector" and "informal sector" non-farm production. Furthermore, this terminology may lead us to pay too little heed to the crucial part played by smaller centers that would never be designated as "urban-industrial." Finally, there is the question raised by Ruttan, as by many others: "what makes the growth points grow?" I submit that part of what makes them grow is in the fact that as they develop rural hinterlands link back into the towns and draw upon their services. Interdependencies among locations characterized by varying degrees of rurality or urbanism are not merely in one direction; the interrelationships operate

both ways.

This leads me to three very general points. (1) "Ruralized" primary schooling is definitely dysfunctional as part of a strategy for rural development, for integration of rural and urban activities, and for intensification of rural-urban information fields. (2) Most migration contributes positively in the long run to rural development; in this perspective it is mainly a "good," not a "bad."[96] (3) Policies designed to build up a co-ordinated spatial structure that reaches deep into the hinterlands must have a high priority both for rural development and for economic and social development more generally.[97] There can be no absolute priority, and this third point is the most difficult in terms of both costs and other problems of implementation. It is also the most value-laden in its distributive implications.

Economic incentives and agricultural progress

In the opening pages of this essay I remarked on the perversity of economic policies in many LDC's in their effects on agricultural progress.[98] A large farm population relative to total population gives no assurance that farmers will influence national policies in their own interest — in fact they may exercise less influence than farmers in industrialized nations. At the same time, public policies designed to control and stabilize agriculture in some nations (in industrialized nations and LDC's alike) aggravate the instabilities and risks encountered by farmers elsewhere; among the main sufferers from these policies are some of the farmers in LDC's. So far as domestic policies are concerned, it is convenient to consider two major sorts of distortions: distortions in pricing, supplies and markets, and distortions in research and related activities.

Marketing boards squeeze farmers to help finance national budgets, farm prices often (and increasingly) are controlled to protect consumers, and

policies of "import substitution" intended to encourage industrialization often have the effect of raising the prices of the producer and consumer goods that farmers buy. The fact that government policies commonly distort market incentives, in collectivized and market economies alike, is generally recognized by students of agriculture; yet those distortions are rarely mentioned in reports of either national or international agencies, or even of private foundations. This omission is striking from the perspectives of both internal interests of a nation and the international repercussions of economically perverse policies. Examples are easily cited, for one nation after another, and the distortions seem to be increasing.

At the same time, research in agriculture is underfinanced and often distorted by passing fashions that spread through the international and national centralized agencies. Farmers in low income countries, and with them the urban populations of those countries, are the losers. Farmers in those countries have not yet seen the importance of research oriented to their particular situations, and they have not banded together to press for public support of such endeavors. Often agricultural extension efforts have been undertaken before there was anything to take to the farmers. Neither schooling nor agricultural extension can do much for agriculture when there is a lack of pertinent new knowledge to be applied. In sum, the agricultural advances that have been made over the past decade or so have been remarkable in view of the obstacles to that progress, but those obstacles seem to be increasing rather than diminishing. Sustained progress in agriculture depends most fundamentally on policies that provide economic incentives favorable to increased productivity and the research base on which to build. Schooling and extension can accelerate agricultural progress, but they are not of its essence.

Unleashing the energies and ingenuity of ordinary men

One of the most favorable developments of the last few years has been a rising, if belated, awareness among at least some of those in positions of influence that ordinary men are not after all so 'ordinary.' Only as this fact comes to be more fully accepted will the design and implementation of policies for rural development become adequate. For those who need to be convinced, the evidence is beginning to accumulate. In part we have been blind because in our ignorance we have often had faulty perceptions of the sets of alternatives and the constraints on choices for many segments of the population. The shrewdness of ordinary farmers in particular has come to be increasingly appreciated with increases in our knowledge about them. I have referred earlier to activities of the Chinese in Southeast Asia and to the various evidences of ingenuity in the search for and realization of opportunities among both Indians and Africans in Kenya. Anyone who is familiar with the development of the barrios around Lima as these progress to viable communities through mutual self-help must be impressed with how much has been done with so little. Even more remarkable, because of its complexity, may be the spontaneous development of an extraordinarily efficient informal recruiting and rural-rural, rural-urban cyclical migration system in the Sudan, traced in detail by Mark Blaug.[99] No planner could have created so effective a system, one that "integrated" so tidily the various agricultural (and some non-agricultural) activities of that country in a network for the communication of information and for the seasonal allocation of labor resources. The feedbacks into welfare of farm families in diverse zones with varying degrees of geographic remoteness are substantial. This is not to suggest that skill acquisition or entrepreneurial activities are generated out of a vacuum. There must be prior skill and experience to build on. There must of course be opportunity,

but the opportunities have to be discovered; there is no real distinction between the creation of new opportunities and "finding" them.

It is equally important to recognize the constraints on individuals' actions, along with the various ways in which those circumstances may be overcome. Group activities and mutual help are not strangers to indigenous cultures, and in a few instances there has been an attempt (not always sufficiently informed or subtle) to build upon these as part of rural development strategy. Nevertheless, despite all the recent talk about encouraging self-help, not much explicit attention has been given to these questions: What sorts of things are best done by government directly, what indirectly? Which government policies (and restraints) may best unlock the development potentials latent in the population and in indigenous institutions? What may stimulate the relatively spontaneous emergence of new ways of doing things, including new ways of organizing activities? These questions apply to all sorts of endeavors, including education and training and the provision of credit and other facilities for both agriculture and nonfarm enterprise.

The need for an "institutional" approach is widely recognized. An illustration is Harry Oshima's remark with respect to micro examples of "integrated rural development:" 100

> ... the IIRR and its Philippine counterpart, the PRRM, seem to have abandoned the individualized approach and to be going in the direction of the institutional approach recognizing that an individual farmer can improve his condition only through the support of his fellow farmers and that a village community can develop itself only when it is supported by the surrounding village communities.

Group association has often been important in the extension of credit to small farmers. Examples include the provision of credit by multipurpose farmers' associations in Taiwan and the group organization for this purpose initiated by the campesinos themselves in the Puebla project. Village

cooperative credit systems have worked with decidedly varying degrees of success, however.[101] Local group activities in the construction of physical facilities have of course been common in the past in the building of primary schools, among other things, although such activities are discouraged by desires to make rural primary schools look like urban schools.

Local self-help through informal or formal associations is one thing; the formal "coordination" of such activities is something else. I have misgivings, accordingly, about the following statement by Kipkorir with respect to non-formal education in Kenya:[102]

> The multiple mechanisms for coordination of non-formal education have not caused adoption of a comprehensive view of the learning needs of children and youths or a nationwide integrated effort to meet those needs. Nor has there been sufficient progress in making the educational activities integral components of the process of planning and implementing the special district rural development programs.

The biased results of officially sponsored and controlled "non-formal" education is not the question. I just wonder whether yet more direct official "coordination" is the way to correct that bias. Indeed, can any society in the world operate such "coordination"?

Whatever may be said about decision-making by individuals and by informal groups, there can be no denying that there is a new interest in fostering "decentralized decision-making", at least in official administration. This sometimes is accompanied by an ideology of "maximum feasible participation" of the rural populace, an ideology that evokes memories of this same slogan and of attempts to implement it in laggard areas of the United States a decade or more ago. One problem in the LDC's today as in the United States earlier is to elicit such participation. We must ask, participation in what?[103] Hertford remarked that "for most participants ... rural development came to mean any socio-economic change in rural areas accompanied by greater participation by large numbers of rural inhabitants

in determining the direction of that change and in benefiting from its results." But is such participation even remotely "feasible?" Perhaps we should look to participation of a more focused sort for resolution of quite specific and narrowly delimited problems. Such participation could be a highly educational experience for both the ordinary (?) participants and the officials or other "experts." Like the "excessive" qualifications to which I referred earlier, it may be that again an attempt to accomplish too much is counterproductive.

The fact remains that today there is wide acceptance of the proposition that "the efficient delivery of bureaucratic services to rural communities must depend on effective organization at the community level."[104] What that means is not so clear, although the difficulties in achieving "it" are not questioned. Equally unquestioned is the need for new sorts of training for local administrators and for others who will play key parts in implementing any effective program for the decentralization of decision-making. Such training would have to go along with Ruttan's "reforms in the distribution of economic and political resources and ... the availability of social and legal instruments which permit communities to effectively organize their ... resources toward common objectives" — all this, to "achieve access to or enforce efficiency in the delivery of bureaucratic services." The need for training and ruralization of both professional and administrative personnel was emphasized in the Rockefeller conference last April.[105] Also, in his summary of three Ford Foundation seminars on employment in developing nations, E.D. Edwards attributes blockages in ruralward diffusion of modern activity to "vacillating political will, the shortage of managerial resources, and the weakness of decentralized administrative structures."[106] The program of the Ford Foundation for the encouragement of "multi-level planning" and decentralized decision-making is focused directly

on these problems. The need is seen; how to meet it has not yet been worked out. What part should central government play in decentralization? If it must play a strong part in order "to hold down the influence of more powerful members of the village community," we must then wonder "how the influence of the central government can be lessened so that eventually it will act only as a guide and adviser?"[107] As things now stand, the dependence of villages on the central government typically is reinforced by the methods of delivering central government services.[108]

Both experts and planners are tempted to play God, and whether playing God or the Devil (who knows which?) the results are likely to be inimical to emancipation of ordinary people. Trying to enlist them as participants in planning does not alter this outcome. The crucial thing is that planning be for equity and freedom, not for control. On the "devil" side, there is plenty of evidence that members of the bureaucracy commonly capture a relatively high share of the gains generated by their activity in the form of new jobs, if not of corruption. Too often this proliferation of jobs is what happens when the goal is to streamline and coordinate services. Resources devoted directly to coordinating or integrating development programs typically have low returns. The problem is how to coordinate. Even in our most angelic of moods, we recognize that we know little. Guy Hunter has written more effectively on this subject than anyone else I have read in some time. I therefore close with an extensive quotation from him:[109]

> Four processes are necessary - to push decision-making and discretion downwards from the centre; to establish an acceptable point to which it is pushed; to establish an effective contact with farmers and an upward flow of information from them; and to retrain field staff to listen first and advise afterwards. Everyone knows how difficult this is, but primarily because: a) politicians, planners and administrators at the centre insist on knowing best; b) simultaneously, knowing that they don't really know, they hang on to slowly changing generalized orthodoxies: 'Credit is the first step', 'Cooperatives must be created', Elected committees must be set up everywhere', 'Traders are exploiters', Extension staff must deliver packages and achieve targets', 'Integrated rural development'.

110

And then, in another paper:

> My thesis is really in two parts. First, that the choice of action cannot simply arise from analysis... Action is constrained by ... feasibility in manpower and expense; by knowledge of the capacity of 3rd level field officers; and, above all, by the aim of providing, not a thousand individual prescriptions but a physical and motivational environment within which the main actors (farmers and officials) can use moderately enlightened common sense and discussion to find their own way through their part of the forest. Government action must be broader and simpler than the sum of analysis implies.
>
> The second part rests on a belief that sample researching at micro level (more of it, and better done), will in fact reveal common factors, common guidelines to conduct, by means of which commonsense can indeed be enlightened. This, of course, implies a belief that the local social process itself, enabled by adequate infrastructural help, but not constrained by detailed regulation, has the necessary dynamism to meet its own problems.
>
> Ultimately, this means a belief in the free society. But even relative simplicity of government action will not be achieved by simple thinking, or just saying "Participation," "Democracy." Just as clear and simple engineering design is painfully evolved from Heath Robinson complexity, so the lines of simpler and more effective government action will need much hard and detailed work in elucidating local facts and problems.

This paper has concentrated primarily on rural economic development, but in closing I want to take a broader, human perspective. Ultimately, development must be of, by and for people — for the enrichment of human life. Economic development in the sense of measured increases in productivity and output is a necessary condition for such enrichment among the rural poor. However it is measured, rural economic development is the means to a broader end, the freeing of people from harsh constraints that inhibit realization of their full "humanity." This goal is not mere Benthamite happiness, and neither is it just the betterment of man that was the hope of the enlightenment, though it may have elements of both. It is the diffusion of perceptions and experiences initially restricted to a minority. Above all, it is the extending to increasing proportions of the population of an opportunity to make meaningful choices and to participate actively in their own destinies. Development imposed from above, even were that possible,

contributes little to the dignity of man and to the fuller realization realization of human potentials.

Footnotes

(Sources are listed separately on pages 107-117)
References to these are indicated by number in brackets, as [ ]

1. [7] p. 249
2. [15] p. 20
3. [58]. The importance of both wage employment and self-employment in the informal sector, and in both urban places and places of varying degrees of rurality is often underestimated. Illustrations are provided for rural-urban Uganda in [94], [95], and [96] and for urban Ghana in [47]. On this point see also [38] and [55].
4. This point is discussed analytically in [17].
5. [14] p. 98.
6. ibid. pp. 113-114.
7. ibid. p. 129.
8. [4] p. 34.
9. [85]
10. [83]
11. [99] p. 206.
12. [57] pp. 27-28.
13. Concern for the "dehumanizing" nature of work on the assembly line has a long history that goes back even to the late eighteenth century before there was anything like the modern corporation. For some decades in the present century there has been frequent bemoaning also of hierarchical authority relationships in business enterprise, though bureaucracies have received less attention on this score. The recent literature on "segmentalized labor markets" is only one of the ways in which such concerns are expressed today, but it provides a particularly striking example of the paradox to which I refer.

14. Simon Kuznets was one of the first to give explicit and careful attention to this fact, which I also have discussed. See references /14/ and /65/.

15. Some evidence on this point is given, for example, in /46/ p. 361, although the argument is not developed there. Harker has carried his analysis further in an unpublished typescript.

16. /82/ pp. 53-54.

17. Ben-Porath has published several empirical studies on this subject. The essay that most clearly sums up the problem (though not the data) is reference /9/.

18. /9/ p. 304.

19. The "optimum" position for a particular family will depend upon both (a) external circumstances affecting the economic value of children to the family and the costs of having and rearing them and (b) tastes with respect to family life. Conceptions of the optimum may of course change; to speak of an optimum is not to assume that parents or potential parents have a fixed view that is unaltered by either shifts in their circumstances or experiences with children already born. Ben-Porath discusses these points and some of the issues that have been raised about them for entire sub-populations, along with lags in adjustments. A number of scholars are currently interested in one or another facet of this complex problem. I have made no attempt to list any of these here.

20. /3/

21. This perspective is still unusual among writers on educational planning, but all the more refreshing when it appears in that literature. Self-education has an old history in practice, and has been very important in the development of all of the now-developed nations. Ideologically it has long been associated in particular with the ideology of "free enterprise." However, it is finding explicit expression today and is most overtly linked to policy in quite other settings — most notably, perhaps, in China. On China see /66/. More generally, in recent writing on educational planning see /29/pp. 170-171 and

244-246, where the comments on self-education are linked to use of mass media.

22. I am unhappy about the distinction in recent planners' language that identifies "formal" with schooling. Out-of-school education can be formal also, even if not part of a highly formalized and rigid curricular and examination sequence. Moreover, there can be informal ways of providing education in schools. See references [16] and [43].

23. The seminal original work on this important distinction was by Gary S. Becker. See reference [8].

24. The first clarification of this point to my knowledge was in my "From Guilds to Infant Training Industries," reference [14].

25. Skills and knowledge acquired in one enterprise can under some circumstances actually have a high value elsewhere. For example, when a new firm is starting up it can need some experienced workers as a nucleus around which to build and train its labor force. The per man cost of training a totally new and inexperienced group of operatives, which I many years ago called the "raw group problem" (reference [14]) is far greater than the cost of training a new member of an ongoing group. Moreover, for men who have managerial or entrepreneurial roles, it sometimes is to the advantage of a firm to hire a man whose experience elsewhere can both give him perspective on his new tasks and provide for the firm an enlarged and deepened participation in important communication networks.

26. For a discussion of some of the ways in which this has been done see [14] pp. 125-129.

27. [22] p. 440.

28. On this see [4], [33] p. 32 and, for a striking example, [60].

29. [60] p. 67.

30. ibid. p. 69. See also illustrations in [58]; one of the most interesting of these is given on pp. 175-176.

31. It may be of some interest to compare the metamorphosis of early British apprenticeship from a tightly bound to a comparatively open system in response to changes in the economic environment with the adaptive behavior manifested in King's African examples — and to compare both with apprenticeship conditions and adaptations in colonial America. See /14/ pp. 104-113.

32. /61/ pp. 182-183.

33. /43/. In connection with very informal learning environments and educational methods in higher education see /16/.

34. A discussion of these issues in relation to educational planning is included in /13/.

35. This is of course widely recognized, but for the somewhat distinctive perspective presented in this paragraph I have drawn upon C. A. Anderson, /4/ p. 5.

36. There are many pieces of evidence to support this proposition, of course. It is particularly interesting to notice, however, that this relationship is specified in the writing by a man often regarded as among those who have challenged the productivity of schooling and emphasized the "screening hypothesis." I refer to Lester Thurow's theory of "job competition," which he sets up against "wage competition." In Thurow's formulation, people with more schooling are preferred by employers because they will learn more rapidly on the job or in training programs in the firm. His analysis is presented in /93/.

37. /11/ p. 28.

38. Compare /29/ p. 138. See also the discussion of general manual skills in /35/.

39. /57/.

40. /4/ p. 34.

41. [53]. For a shorter formulation in which the analysis is related to education, see [54] and the introduction to Part III of that same volume.

42. These concepts have a central place in [75].

43. See Singleton's extremely illuminating discussion of the position of rural teachers in Thailand and in the Philippines in [89]. The difficulties in bridging the local and the bureaucratic national cultures, even for the individual teacher, are clearly illustrated; under these circumstances there can be relatively little bridging of cultures in the exercise of teachers' roles in classroom or community.

44. [75].

45. A very subtle appreciation of existing networks and strategies to enlist "grass roots involvement" and initiative (not just "participation" on committees) are by no means the same thing as the devolution of decisions to local officialdom, although the latter can facilitate the former.

46. [99] p. 205.

47. For some more general but pragmatically extremely important questions about use and productivity of time in agriculture and its relation to family structures and to migration, see the economic analyses (and contrasts) in work by Amartya K. Sen and T.W. Schultz — references [83], [86], and [87]. Equally relevant is the discussion of distortions in the concept of unemployment and its measurement in urban populations, especially with respect to the failure to count many informal sector activities, including subsistence activities. There is a considerable literature on this subject.

48. [29] p. 108.

49. Among the studies that are most directly relevant here, the following deserve particular notice: [24], [25], [36], [37], [45], [46], [48], [50], [69], [98], [105], [106]. Some of the unanswered questions and related untested hypotheses are being pursued further by Robert Evenson in the Philippines and

India and by Rati Ram in India, as well as by several economists working on data for the United States. Other studies in the LDC's are not as far advanced or have as yet escaped my notice.

50. See /71/ pp. 250-251 and /46/ pp. 360-63; also Harker Typescript.

51. Shortlived, that is, in the sense that the effects are quickly exhausted, even though they may be permanent. On the achievement of modernization as achievement of a state of continuous progressive change, see /70/.

52. For a terse analytical discussion, see /22/.

53. The Indian government has in fact pursued for some years a policy designed to encourage "small-scale industry," defined as an undertaking or undertakings with initial investments in machinery and equipment of under what amounts in dollar terms to roughly $100,000. In principle, at least, the tiniest little independent craft enterprise is included. The implementation of the policy, consistency (or inconsistency) between the small-scale industry and other policies of the government, and the stability (or sudden shifts) in incentives and assistance under this program are another question. For insight into the way things work out in practice see references /91/ and /92/.

54. /26/ preface.

55. /55/ p. 225.

56. /49/ pp. 4-5.

57. /35/ p. 216.

58. /58/ pp. 179-181. Also relevant is Joyce Moock's work in Kenya, reference /69/.

59. /58/ pp. 181-182.

60. ibid p. 183.

61. /29/ p. 50.

62. /40/ p. 566.

63. /32/ pp. 482-483. There are some other important lessons from India's experience in attempts to encourage small-scale enterprise — lessons that

are well documented by evidence in the careful interview study of small Indian enterprises by the Taubs, in /91/ and /92/. Most important is the fact that types of programs that provide incentives or opportunities that are mainly general in nature or provide favorable conditions for purchase of crucial material inputs, rather than more direct attempts to foster particular activities, have far greater promise. Other crucial lessons that are made more explicit in the Taubs' analysis are the importance of avoiding sudden shifts in the details of a program, the dysfunctionality of excessive government red tape, the need for formal education as a basic condition of successful expansionary enterprise, and the need for much more understanding and interest in effective communication of government agents with the less sophisticated enterprisers. Also documented is the problem of conflict in incentive and opportunity effects of programs directed to other purposes with those focused on the small-scale firms.

64. /55/.

65. /14/ p. 124.

66. /59/. This illustrates both the operation of Rado's "Explosive Model" and the damping down of its effects discussed by Foster in /38/ pp. 9-15.

67. /64/.

68. /78/ p. 25.

69. /29/ pp. 24-25.

70. /1/ p. 2.

71. /72/ p. 18.

72. ibid p. 19.

73. For a recent discussion of this point see /4/, and in application to Papua New Guinea (as an example) see /27/. I was glad to read in the paper for this conference by King and Postlethwaite — if I interpret them correctly — that their Form A variant was a dead issue (along with the notion of a rural-urban

dichotomy); I hope that message reaches some of those who seem not yet to have received it. However, I wish their paper was equally unambiguous about their Form B variant.

74. There could be no more striking example of the ignorant and unimaginative projections of experience from their own backgrounds among "experts" from the West onto the LDC's than in some of the remarks and the recommendations that assume participation in productive activity to begin in the late 'teens. This way of perceiving things is of course related to the emphasis usually given to the "modern" or "formal" sector of the economy and the disregard of the informal and semi-subsistence sectors. On the other hand, there are strong grounds for deferral of admission to primary school long enough to maximize the pace of literacy acquisition among children and to prevent the overcrowding of ill-equipped classrooms by small children who have neither books nor regular seating space — a situation that has been common in many places where parental eagerness ran ahead of teachers and facilities.

75. [47] p. 37.

76. [30] p. 73.

77. The phrase "undifferentiated American" appears to have originated with Daniel J. Boorstin. A related aspect of American educational development was the readiness to introduce unconventional subjects and ways of teaching into institutions of higher education. The lessons of the Land Grant Colleges for the LDC's are fundamentally very different from what has usually been drawn from those institutions as they appear today. When they were first established it was not at all clear just what they would be. They had very little to work with in finances and resources, and no models to build on. One of the consequences was a highly innovative spirit and the participation of students and faculty using their ingenuity to develop a program and to "make do" with whatever was at hand. In my study of the role of Land Grant Colleges and universities in human resource development, I drew the following conclusions ([16] pp. 545-546):

> One of the largest and deepest of our oceans of ignorance is in what schooling does to men's willingness to take chances, to try something new, to forge ahead in the search for a better way. Perhaps the most that can be hoped is that schools will not destroy these qualities.... Yet it is hard to imagine a college environment that could have given greater support to practical creativity and enterprise ....

The whole land-grant experiment, from the start, was a tremendous demonstration of these elements in American 19th-century society. Going optimistically into the West, to do they knew not quite what, to face untold hardships, often in unfriendly environments, the pioneers of the land-grant colleges would not recognize the large risks of failure that surrounded them. That they were in other respects ill-equipped for their tasks mattered less than their determination and their ingenuity. In the end their very ignorance may well have proven a blessing; lacking anything to teach, they had to make it, and so they made it. Lacking students they had to make them, which they proceeded to do. In the process they created a new kind of education. It is no accident, I suspect, that Dewey came from a land-grant atmosphere. Here learning was a joint affair, the professor and the student worked it out together, by trial and error. Agricultural education was the keystone in this. If nothing to suit their purposes could be found in books, then it must be found by going back to the roots of things, by observing, experimenting, testing. Lacking funds, they must make their own equipment as well as creating their own subject matter. What students saw and did in college, they would do when they came out to participate in the economic life of the nation. Paradoxically, the fantastic "inefficiency" of the early land-grant college, an inefficiency that lasted well over a generation in many of them, may have been the most efficient conceivable way for them to form human resources for economic growth.

78. [78] p. 25.

79. This point is emphasized also in the World Bank's sector paper on rural development. See [104] pp. 48-49.

80. [56] p. 253.

81. [55] p. 231.

82. [30] p. 17.

83. [62] p. 214.

84. [6] pp. 7-8.

85. [30] p. 17.

86. This has been observed in several areas in which the "Green Revolution" has taken hold. It is evident, for example, in the use of new varieties of wheat in some of the northern areas in India. Among other things, a factor that may explain this phenomenon is the fact that the new varieties may make it worth while to devote more time to cultivation, and that there is frequently under-utilized labor attached to the smaller farms. Amartya Sen's analysis of farm family labor supplies and utilization is relevant here; see [86] and [87].

87. /77/.

88. /104/ p. 32. The fallacy of trying to redirect research to emphasize poor farmers in particular has been emphasized by T.W. Schultz in several recent papers.

89. /31/.

90. /104/ p. 32.

91. /104/ p. 44

92. This has been amply demonstrated over many years for Eastern Kentucky in the United States. See reference /18/.

93. /81/ p. 147. See also /82/.

94. /78/ pp. 11-12.

95. ibid p. 16.

96. Some dislocations are an inevitable concomitant of change; this would be the case even without the pressures of rapidly rising population. The "problem" of migration to the cities is highly visible to urban dwellers, but it constitutes in fact a very small fraction of the rural population in most countries; the scale of the migration seems big because a small fraction of the rural population may nevertheless be very large relative to the size of the urban population. Moreover, the extent of urban unemployment typically is very much overestimated because of the way it is measured; employment in informal-sector activities often is not counted, and those migrants engaged in the informal sector activities on a short-term or part-time basis (or even full time) frequently are counted as "unemployed" — the more educated among them frequently so designate themselves. Furthermore, many of the migrants to urban places return to their villages. There is an extensive literature on these questions that I make no attempt to summarize, but particularly pertinent to this essay are references /20/, /38/, and /97/.

Despite the sometimes severe transitional problems associated with heavy in-migration in an urban perspective, these still are typically movements from areas offering little opportunity for the purpose of exploring possibilities (or going directly into known places) where there is a greater range of opportunities. The importance of high rural birth rates together with very degraded land and low soil fertility in determining rates of rural-urban migration could be documented for many countries, as it has been for Sierra Leone in /67/. In most cases the rural areas are benefited by these migrations, as are the migrants; the pressures of population on poor land are to some degree relieved, and migrants who return bring back new skills (however modest) and, most significantly, information about the urban life and economy. Both generally and through more specific personal connections, rural and urban people are brought closer together, in better integrated information fields. This does not mean that the rural areas never suffer losses to set against the gains from this increased interaction;

in extreme cases, illustrated by some of the Voltaic migrations of men to the cities and plantations of the Ivory Coast (for example), the communities of origin may suffer severely from the absence of the male agricultural labor force, and this can have long-term effects. Nor can we simply set aside transitional dislocations that are reflected in the urban influx. On all counts there is a clear enough case for redirecting policies affecting rural life to make that life more attractive in both economic and other ways. (A discussion of evidence from many sources concerning factors associated with migration for individuals and determinants of migration rates for entire sub-populations is provided by J.B. Knight in [63].

97. On this theme see [44] and [70].

98. In this section I am heavily indebted to T.W. Schultz, references [79], [80], [84].

99. [12].

100. [72] p. 4.

101. On this issue see reference [41], especially pages 11 and 15.

102. [62] pp. 214-215.

103. [49] p. 14.

104. [78] p. 20.

105. [41] p. 25.

106. [33].

107. [72] p. 29.

108. With respect to the political questions relating to devolution of authority from the center to local areas, Foster has this to say ([38] p. 5):

> This suggests that national planning will often involve the devolution of decision-making authority away from the center and not its concentration in the hands of state planning agencies. This is particularly vital insofar as in all those countries that have achieved independence in the last decade or so the demands placed upon the central polity for equity, welfare and development far exceed the system's capacity to respond. The answer to this problem is <u>less</u> not <u>more</u> concentration of authority. It may be rejoined that this approach runs counter to the expressed need to "build the nation" and indeed generates secessionist pressures. For what it is worth it is my opinion that many secessionist movements have been a direct response to premature efforts to impose central authority ...

109. [51] p. 10.

110. [52] p. 22.

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